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PREDICTING TRAINABILITY OF M1 CREWMEN

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The purpose of this research was to examine ASVAB and non-ASVAB measures as potential predictors of M1 training performance. Ten subtests, the aptitude area scores CO (Combat Operations) and GT, and AFQT (Air Force Qualification Test) were taken from the ASVAB. Five variables tapped the soldiers' backgrounds and personal characteristics. Five job sample tests were also used: tracking, target acquisition, fire control computer, use of the TM, and round sensing. Criteria included OSUT GATE scores, time and accuracy (hits) on firing of Table VII and instructor (continued)

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ratings of trainees, as well as two composite criteria. Data collection was conducted among 146 soldiers in the first two M1 OSUT classes at Ft Knox. The analyses involved a series of multiple regressions, first on the ASVAB subtests and then on the remaining measures. Regression equations that reliably predicted criteria were crossvalidated between OSUT using both regression weighted and unit weighted models.

ASVAB subtest scores were examined to determine: 1) if the aptitude area scores CO and GT were predictive of M1 OSUT soldier performance and 2) to ascertain whether or not a new combination of subtests might improve upon CO, the current Armor selector. Finally, job sample test scores were evaluated to determine if their inclusion in a composite predictor with CO would result in a significant improvement in predictability above that from CO alone. Results of regression analyses demonstrated that CO predicted M1 OSUT performance in both samples while GT did not, a new combination of subtests had validity coefficients equivalent to those of CO in each company and were apparently more consistent in strength, and job sample tests while consistently identified as predictors, did not significantly improve upon the correlation obtained from CO alone. Consideration of the results of this research should be tempered by the understanding that moderate sample sizes were involved, no academic failures occurred in either OSUT company and criterion measures most appropriate to the validation of the job sample tests were not available.

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Armor Training in Combat Units

ARI Research Reports and Technical Reports are intended for sponsors of R&D tasks and for other research and military agencies. Any findings ready for implementation at the time of publication are presented in the last part of the Brief. Upon completion of a major phase of the task, formal recommendations for official action normally are conveyed to appropriate military agencies by briefing or Disposition Form.

FOREWORD

The Fort Knox Field Unit has conducted research in the area of Armor personnel assignment for the past several years. Research efforts have involved both paper-and-pencil and job sample performance tests as predictors of performance potential. The primary focus of the research has been on unit assignment of tank crewman to the gunner and tank commander positions. Paralleling these efforts, some research has been directed toward the assignment of Armor enlistees to position specific or tank specific tracks within Armor Initial Entry Training (IET).

The recent fielding of the Army's new main battle tank, the M1 Abrams, and the subsequent institution of initial entry training programs for the new MOS 19K, raised questions as to the generalizability of present assignment methods to this sophisticated new system. More specifically, the questions concerned whether the minimum score for the current Armor selector, the Combat Operations (CO) Composite of the Armed Services Vocational Aptitude Battery (ASVAB), should be increased; whether some alternative composite of ASVAB subtests might better predict M1 training outcome, and whether job sample performance tests might add to the effectiveness of performance prediction.

This report describes the results of preliminary research on the assignment of Armor recruits to M1 training. Initial Entry Training test scores and training performances for two companies of M-1 trainees were analyzed. Since there were no academic failures, increasing the present selector score did not appear justified. The present CO composite provided the best prediction of training success. However, further screening of Armor recruits using additional ASVAB subtests (Numerical Operations and Electronics Information) and some measures from the job sample tests might increase the effectiveness of assignment. The results of this effort provide an empirical base for the future examination of these predictors with reference to their validity and cost effectiveness in the selection and assignment of Armor personnel.

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BRIEF

Requirements:

Examine ASVAB data, biographic information, and job sample tests as predictors of M1 training success.

Procedure:

Data was collected on 146 soldiers in two OSUT. Scores of ten subtests, aptitude area scores on CO and GT and AFQT scores were taken from the ASVAB. Five variables tapped soldiers' backgrounds and personal characteristics. Five job sample tests were also used: tracking, target acquisition, fire control computer, use of the TM, and round sensing. The criteria used were GATE scores, instructors' evaluations, and Tank Table VII firing hits. A series of multiple regressions were calculated and crossvalidated by means of unit weighted composites.

Findings:

Four ASVAB subtest (CS, AS, EI, and NO) were found for which the unit weighted composite predicts training slightly better than CO. Among the job sample tests, computer accuracy was linked as a suppressor variable to GATE scores and rankings, computer time and round sensing accuracy appear to be associated with firing hits, and target acquisition time is a predictor of rankings.

Utilization of Findings:

Because of weaknesses in the measurement of training performance, no recommendation was made to change from CO to some other method of selection for M1 training. The job sample test approach is theoretically sound, and development of such measures should continue. Until criterion measures of the performance they are intended to predict are adequately defined and reliably obtained, the predictive power of job sample tests cannot be accurately assessed.

PREDICTING TRAINABILITY OF M1 CREWMEN

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PREDICTING TRAINABILITY OF M1 CREWMEN

INTRODUCTION

The US Army, in the mid-1970's, became interested in profiling the type soldier best suited to serve on what would later become the Army's main battle tank, the M1 Abrams. Questions were raised at that time concerning how personnel should be selected to serve on M1 tanks, what the requisite aptitudes and abilities were and how the personnel side of the man-machine interface could best be used to achieve maximum capability from this complex armor system. However, it was not until the introduction of prototype M1 tanks and the implementation of institutional courses for initial entry training of M1 crewmen late in 1980 that the necessary test bed to address these questions was provided.

The US Army Research Institute (ARI) has conducted research using these first M1 training courses to address the following questions: (1) could an aptitude measure be developed using the Army's current test battery which would predict success in M1 initial entry training and (2) could hands-on tests be developed as indicators of future performance of M1 crewmen.

In an initial overview of the problem, Black and Kraemer (1981) analyzed aptitude requirements for the four crew positions in the M1 tank. The results of these analyses provided identifiable duty and task differences between M60A1 crew positions and M1 crew positions. It was concluded that the US Army's selection requirements for M60A1 Armor crewmen might not be adequate to select potential M1 crewmen, if the differences noted in the M1 task analyses reflect substantial differences in the underlying aptitude requirements. For example, because the M1 ballistic fire control system is computerized, electronic or skilled technical aptitudes may be necessary prerequisites for operating the fire control system. Measures of these aptitudes are not currently included in the M60A1 Armor crewman selection battery. Based on these analyses, the current Armor selection procedures and the relevant testing literature were reviewed. This review was the first step in the development of predictors of M1 crewman training performance.

Current Armor Selection Procedures

The Army and the other armed services administer the Armed Services Vocational Aptitude Battery (ASVAB) to all recruits. The ASVAB yields scores on ten subtests (see Table 1). Subtest scores are standardized to a mean of 50 and standard deviation of 10, and composite scores are formed for various aptitude areas by summing standardized scores for particular subtests. The composites are then standardized again to a mean of 100 and standard deviation of 20, and validated for particular occupations within the military community. Cutoff scores are established based on the obtained validation coefficient, the manpower input and the manpower need. To qualify for service in the Army in any MOS, a recruit must obtain a minimum Armed Forces Qualification Test (AFQT) score of 38 (i.e., 10th percentile); AFQT is a weighted composite of the Arithmetic Reasoning, Word Knowledge, Paragraph Comprehension, and Numeric Operations subtest raw scores. At present, a

Table 1

ASVAB Subtests

SUBTESTS
General Science (GS)
Arithmetic Reasoning (AR)
Word Knowledge (WK)
Paragraph Comprehension (PC)
Numerical Operations (NO)
Coding Speed (CS)
Automotive/Shop Information (AS)
Mathematics Knowledge (MK)
Mechanical Comprehension (MC)
Electronics Information (EI)

recruit desiring to enter any Military Occupational Specialty (MOS) in Armor must obtain a minimum score of 85 on the Combat Operations (CO) aptitude composite; CO is composed of the Arithmetic Reasoning, Coding Speed, Automotive/Shop Information, and Mechanical Comprehension standardized subtests. Currently these two ASVAB scales define the entrance requirements for Armor.

Testing Literature Review

Paper-and-Pencil Tests. Several attempts have been made to improve upon CO as a predictor of M60A1 tank crewman performance (see Table 2 for summaries). Greenstein and Hughes (1977) administered 11 specialized paper-and-pencil tests to Armor trainees prior to training. These tests included, for example, Visual Memory, Attention-to-Detail, and Locations Tests (Lauer, 1952). In addition, AFQT and three aptitude area scores (Combat Operations, Field Artillery, and Motor Maintenance) from the Army Classification Battery (forerunner of the ASVAB) were obtained. These measures were then related to performance on tests of tank firing, driving and loading. Significant intercorrelations were obtained among the 11 paper-and-pencil tests and the aptitude area scores, indicating that the tests were probably tapping a generalized aptitude rather than the job specific aptitudes for which they were developed. CO did not correlate with any of the criterion measures, although seven of the 11 paper-and-pencil tests were predictive of loading errors, as were three of the four ASVAB composites (FA, MM, and AFQT). Five paper-and-pencil tests and AFQT were predictive of driving performance. The results were viewed "as broadly indicating the existence of empirically identified relations between a class of predictor variables and criterion performance in driving and loading" (p. 18).

In contrast to the Greenstein and Hughes (1977) effort using Armor trainees, Eaton (1978) implemented concurrent validation research with incumbent unit tank commanders (TC) and gunners. He used seven of the Greenstein and Hughes paper-and-pencil tests and added two tests to the list of potential predictors, Mechanical Abilities and Object Completion. Using the criterion measure of total score on main gun tank qualification firing (Table VIII) resulted in no significant correlations for TC performance; only the Locations Test predicted gunner performance.

Eaton, Bessemer and Kristiansen (1979) searched for combinations of ASVAB subtests and specialized paper-and-pencil tests which would predict trainee and unit soldier performance in tank gunnery and driving. Initial results with trainees identified six gunnery predictors and seven driving predictors but the results were not replicated with either a second sample of trainees or a sample of gunners and TC.

Maitland, Eaton, and Neff (1980) conducted an extensive crossvalidation of the ASVAB predictors initially identified by Eaton, et al. (1979). Predictor equations resulting from this research were used in 1979 and 1980 by the Armor Center for assigning soldiers to training as tank drivers or as gunner/loaders. The need for these equations was eliminated when a subsequent change in training policy led to cross training of crewmen on all positions.

Table 2
Correlations Obtained for Paper-And-Pencil Tests and
Firing, Driving and Loading Criteria Across Three Research Efforts

	FIRING CRITERIA							DRIVING CRITERIA			LOADING CRITERIA
TESTS	Greenstein & Hughes (1977)	Eaton (1978)		Eaton, Bessemer, & Kristiansen (1979)				Greenstein & Hughes (1977)	Eaton (1978)	Eaton, Bessemer, & Kristiansen (1979)	Greenstein & Hughes (1977)
		TC	GNR	I	II	IIIa	IIIb				
Attention to Detail	.27**	.26	.10	N/R	N/R	-.12	.02	.32**	-.10	N/R	.16
Patterns Test	.11	.04	-.21	N/R	N/R	.01	.05	.50***	-.26	N/R	.06
Related Forms	.03	N/A	N/A	N/R	N/R	N/R	N/R	.23	N/A	N/R	.25**
Locations	.19	.13	-.30*	N/R	N/R	-.07	-.04	.47***	-.16	N/R	.31**
Army Perceptual Speed	-.02	N/A	N/A	N/R	N/R	N/R	N/R	.22	N/A	N/R	.08
Visual Recognition	-.23	-.02	-.02	.21**	N/R	.01	.06	.32**	.10	N/R	.23**
Visual Memory	.12	-.02	-.14	.22**	N/R	-.06	-.03	.44***	.08	.17**	.39**
Speed of Perception	.10	-.21	.09	N/R	N/R	-.04	.07	.23	.17	N/R	.31**
Lateral Perception Span	.06	.03	.17	N/R	N/R	-.04	.09	.20	.33*	.29**	.33**
Reaction to Signals	-.07	N/A	N/A	N/R	N/R	N/R	N/R	.15	N/A	N/R	.30**
Simulated Zeroing	.25	N/A	N/A	N/R	.20**	.07	-.08	-.20	N/A	N/R	-.06
Object Completion	N/A	.14	.01	.21**	N/R	-.04	.07	N/A	.19	N/R	N/A
Mechanical Abilities	N/A	.26	-.09	N/R	N/R	.07	.02	N/A	.21	N/R	N/A
ASVAB Subtests											
Atten. to Detail	N/A	N/A	N/A	N/R	.26**	N/R	N/R	N/A	N/A	N/A	N/A
Word Knowledge	N/A	N/A	N/A	.20**	N/R	N/R	N/R	N/A	N/A	N/R	N/A
Mech. Comprehension	N/A	N/A	N/A	.25**	N/R	N/R	N/R	N/A	N/A	N/R	N/A
Math. Knowledge	N/A	N/A	N/A	.18*	N/R	N/R	N/R	N/A	N/A	N/R	N/A
Num. Operations	N/A	N/A	N/A	N/R	N/R	N/R	N/R	N/A	N/A	.17**	N/A
Arith. Reasoning	N/A	N/A	N/A	N/R	N/R	N/R	N/R	N/A	N/A	.21**	N/A
Elec. Information	N/A	N/A	N/A	N/R	N/R	N/R	N/R	N/A	N/A	.18**	N/A
Auto. Information[a]	N/A	N/A	N/A	N/R	N/R	N/R	N/R	N/A	N/A	.34**	N/A
Classif. Inv. - Elec.[a]	N/A	N/A	N/A	N/R	N/R	N/R	N/R	N/A	N/A	.26**	N/A

NOTE: N/A - Not Administered. N/R - Not Reported.

[a]Used in earlier versions of the ASVAB (before 1980).

*$p < .10$
**$p < .05$
***$p < .01$

This research on the current Armor selection process indicates that ASVAB scores tend to correlate with performance but, more often than not, the obtained relationships fail to crossvalidate. One explanation for this is the difficulty in obtaining reliable measures of criterion performance. Tests are seldom administered the same way twice, and gunnery tables are not necessarily conducted identically more than once, especially among trainees. In addition, considerable difficulty exists in obtaining relevant criteria. Predictions of gunner performance, for example, have had to rely on measures of crew rather than individual performance as criteria. Another explanation is that historically paper-and-pencil tests have been designed as measures of general abilities, not job specific aptitudes, and thus lack the requisite behavioral consistency with criterion measures.

Efforts to measure specific Armor crewman aptitudes through the development of specialized paper-and-pencil tests have proved no more fruitful than earlier efforts with the ASVAB. However, the trend initiated by the Greenstein and Hughes (1977) attempt to use tests which tapped specific job aptitudes such as acquiring targets (Locations Test), troubleshooting (Attention to Detail), and zeroing (Simulated Zeroing Test) paved the way for the use of actual Armor equipment as well as high fidelity simulators in job aptitude testing. Measuring job aptitude from part task performance on critical portions of the overall job has been referred to as job sample testing (Campion, 1972).

Job Sample Tests. The potential of job sample tests as predictors of performance in manual or mechanical occupations has been examined because of the low validity of paper-and-pencil aptitude tests. Hinrichs (1970) supported an earlier finding of Fleishman (1960) when he noted that "different ability requirements for initial stages of learning in comparison with ability requirements at the final stages of proficiency can have important implications for the prediction of ultimate performance on any task" (p. 56). He concluded that for an applied setting, job sample tests or training progress measures would likely provide better performance prediction than would basic ability tests. He advocated structuring the tests to measure final proficiency skills, not initial proficiency skills.

Wernimont and Campbell (1968) were among the first to distinguish between the two approaches, referring to basic ability tests such as ASVAB or psychomotor tests as "signs" of successful work performance and job sample tests as "samples" of work performance which are behaviorally consistent with the job itself. The behavioral consistency notion is especially important for jobs where job knowledge and job ability are not equivalent. Certain jobs appear to be more amenable to the job sample predictor test approach than others. Particular examples are those jobs involving object manipulation such as typing, bulldozing, welding, or keypunching (Muchinsky, 1975). Paper-and-pencil tests might allow job applicants to demonstrate job-relevant knowledge but not ability.

The advantages offered by the job sample approach include increases in the job relevance of the test and improvement in the applicants' perceptions of the fairness of the testing process (Schmidt, Greenthal, Hunter, Berner, & Seaton, 1977) and significant increases in correlations between predictors and criteria (Siegel & Bergman, 1975). However, one disadvantage involves practicality. Because they are usually individually administered, job sample tests require considerable time and resources. In the future, it is possible that this disadvantage may be overcome with the development of computer-controlled simulators which may obviate the use of operational equipment and numerous test administrators. A second disadvantage is that, as originally conceived, job sample tests were to be used in selecting from among applicants presenting themselves as qualified for a job, not from among personnel requesting training for specific job skills, an obvious need in any large organization. While it is clear that job sample testing is useful for the selection of skilled workers (Gael, Grant & Ritchie, 1975) and avoids some of the pitfalls of paper-and-pencil testing (Schmidt et al., 1977), it is not so clear how these tests can be used as measures of the trainability or the future job performance of untrained applicants.

Addressing this issue, Siegel and Bergman (1975) described a job learning approach to performance prediction which was an offshoot of the job or work sample testing approach discussed by Campion (1972), O'Leary (1973), and Asher and Sciarrino (1974). They compared the validity of their miniature job training and evaluation approach to that of the Navy's tests for machinists and found theirs to be superior. Although Cohen and Penner (1976) questioned Siegel and Bergman's statistical analyses, they did encourage further research on the job learning approach.

While the Seigel and Bergman article first drew attention to this new approach in the United States in 1975, researchers at the Industrial Training Research Unit at Cambridge University had been conducting research using a similar approach since 1968 (Downs, 1968). Their approach was called trainability assessment and was defined as a "practical interview which takes the form of an instruction period followed by a test on what has been demonstrated" (Smith & Downs, 1975, p. 39). The development of trainability assessments requires an initial job analysis followed by the selection of critical tasks for inclusion in the assessment.

The selected tasks must "1) be based on crucial elements of the job, 2) use only such skill and knowledge as can be imparted during the learning period, 3) be sufficiently complex to allow a range of observable errors to be made, and 4) be capable of being carried out in a reasonable time" (p. 39). Trainability assessment has been demonstrated to be successful in selecting electronic assemblers (Smith, 1972), fork lift truck drivers (Downs, 1972), and sewing machine operators (Downs, 1973).

Both the job sample approach for selecting from among job incumbents and the trainability assessment approach for selecting from among trainees have been used in military testing research. Eaton (1978) applied the job sample approach to the prediction of tank gunnery performance by using job incumbents in an Armor unit (i.e., TC and gunners) who were tested on several job skill tests. These tests were administered using a table top tank gunnery simulator (Willey Burst-on-Target Trainer), the Tank Crew Gunnery Skills Test contained in TC 17-12-5 and a mini-tank (subcaliber) range. Criterion data were obtained from the unit's annual tank gunnery qualification exercise and consisted of such measures as total crew score and number of successful stationary precision engagements.. Eaton reported significant zero-order correlation coefficients (see Table 3). This was viewed as a preliminary effort in the area of job sample testing in a military context but one which showed promise for improvement over previous paper-and-pencil testing approaches.

Table 3

Correlations Between Job Sample Tests
and Gunnery Criteria
(Eaton, 1978)

Variable	Gunners (N=27) Total Score	Gunners (N=27) Successful Engagements[a]	Tank Commanders (N=40) Total Score	Tank Commanders (N=40) Successful Engagements[b]
Willey BOT Time	.04	.38**		
Willey BOT Hits	-.13	.04		
FMTRC[c]: Table VII(Moving)	-.06	-		
Table IV(Stat.)	.14	-.30		
TCGST[d]: Gun Laying Time			.24	.37**
Ranging Time			.26	.10
Ranging Error			.07	.08

[a]Battlesight engagements.

[b]Precision-stationary engagements.

[c]Field Mini-Tank Range Complex, TC 17-12-6.

[d]Tank Crew Gunnery Skills Test, TC 17-12-5.

**$p < .01$

The most recent research in tank gunnery performance prediction was conducted in three major phases by Eaton, Johnson, and Black (1980) (see Table 4). The first phase, a concurrent validation effort among trained tank gunners, resulted in the identification of two job sample tests which were predictive of gunnery performance: diamond tracking error and round sensing error. In the second phase of the research samples of trained gunners and trained drivers were tested. The diamond tracking error relationship replicated but the round sensing did not. However, when crossvalidation techniques were employed for gunners in the second phase using regression weights from the first, the result was a significant correlation. A test of the difference in job sample test performance between drivers and gunners revealed no significant effect, indicating that the tests might reflect gunnery aptitude rather than achievement, because drivers had received no gunnery training.

With tentative evidence that the job sample tests as constructed might be indicative of aptitude, the final phase of research was initiated. The trainability assessment approach was used with two groups of gunner trainees; one group was tested during their tenth week of training and the other group was tested prior to training. Significant correlations were obtained between the diamond tracking test and several gunnery performance measures for both tenth and initial week trainees. In contrast to findings during the second phase, trainees with experience (tenth week) performed significantly better on the trainability assessment tests than did trainees without experience (initial week).

Although these studies seem at first to be distressingly inconsistent, a closer look reveals several encouraging trends. Attempts to predict training performance, as measured by testing soon after the soldier had completed driving or gunnery training, were more often successful than attempts to predict performance of experienced drivers or gunners. This is consistent with the position taken by Brown and Ghiselli (1952), by Fleischman (1957), and by Hinrichs (1970), that predictors of trainability are not necessarily predictive of job proficiency.

The results of these studies suggest that continued research on ASVAB measures and job sample tests as predictors of trainability in Armor would be worthwhile. With the introduction of the M1 tank and the new training it requires, investigation of trainability should focus on both the new composites of ASVAB scores and on additional job sample tests.

Purpose of the Research

The purpose of the current research effort is threefold. The first major emphasis was to examine the ASVAB subtest scores of soldiers entering M1 training and determine whether ASVAB subtests, as existing aptitude area scores or in new composites, could be used to predict success in M1 training. The second was to test certain background variables and personal characteristics of soldiers for their ability to improve the prediction provided by the ASVAB. The variables to be examined were reading skills, education, age, dominant hand, and whether the soldier wore glasses.

Table 4

Correlations Between Job Sample Tests and
Gunnery Performance Criteria for Trained and Untrained Crewmen
(Eaton, Johnson, & Black, 1980)

Phase I: Trained Gunners	N	1st Round Hits	2nd Round Hits	Moving Tgt. Hits	Table VI Score
Diamond Tracking Error	26	.50**	.18	.26	.41**
Round Sensing Error	31	.29	.35	-.09	.34*
Phase II: Trained Gunners					
Diamond Tracking Error	24	.43**	.46**	.41**	.49**
Round Sensing Error	24	.33	.35*	.36*	.41**
Unit Weighted Error Composite	24	-	-	-	.64**
Phase III: Gunners-10 Weeks					
Diamond Tracking Time	57	.26	-	.15	.32**
Diamond Tracking Error	57	.24**	-	.03	.25**
Round Sensing Error	57	-	.08	-	.08
Phase III: Gunners-No Training					
Diamond Tracking Time	31	-.12	-	.08	-.08
Diamond Track Error	31	-.11	-	.15	-.06
Round Sensing Error	31	-	-.11	-	-.26

*p < .10
**p < .05
***p < .01

The third purpose was directed toward development and evaluation of M1 trainability assessment tests[1] to augment the ASVAB prediction. The tests were based on tasks selected from the analyses of Black and Kraemer (1980) and the techniques used were similar to those pioneered by the Cambridge University group (Smith & Downs, 1975). The tasks selected were gunner tracking, target acquisition, operation of the M1 fire control computer, and round sensing. A fifth test covered using the M1 Technical Manual (TM), because of reports from M1 crewmen that the TM was difficult to use.

The criteria were training test scores, main gun firing hits, and instructors' evaluations of soldiers' proficiency. The training test scores and main gun firing data were to be provided by the training brigade because both testing and firing were under their control.

A twofold standard of success was set for every potential predictor: the predictor-criterion correlation must crossvalidate to a second group of soldiers, and it must improve on the prediction provided by the CO aptitude area score and the AFQT of the ASVAB.

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[1]Throughout the remainder of this report, the tests are referred to as job sample tests in order to maintain consistency with earlier research.

METHOD

Subjects

The subjects were soldiers in the first two classes of One Station Unit Training (OSUT) for M1 soldiers at Fort Knox. Criterion data were obtained for 88 soldiers who completed M1 OSUT in the first class (OSUT I). In the second class (OSUT II), date were collected for 60 soldiers who completed training.

Procedure

Data were collected from soldiers in five phases: Reception Station testing (ASVAB and biographic questionnaire), job sample testing, class performance testing, main gun firing (Table VII), and instructor ranking.

Reception Station Testing. During their first days at Fort Knox, soldiers were administered the ASVAB (Version 8A).[1] ASVAB were scored by Reception Station personnel. The standardized scores from the 10 subtests, the unstandardized and standardized CO and GT (General Technical) aptitude area scores, and the AFQT percentile score were coded for the analyses. GT was included as a measure of overall cognitive ability; it is composed of the Arithmetic Reasoning, Word Knowledge, and Paragraph Comprehension subtests. Soldiers' ages were also determined during ASVAB testing.

In addition to the ASVAB, soldiers were tested on the Adult Basic Learning Examination (ABLE), which is a reading skills test, and completed a biographic questionnaire which was developed to obtain information on the soldier's education, dominant hand, and whether or not he wore glasses. A copy of the questionnaire is at Appendix A.

Job Sample Tests. This phase of data collection was also conducted during the first days of the soldier's activities at Fort Knox. Five job sample tests were administered: gunner tracking, target acquisition, operation of the fire control computer, use of the TM, and round sensing. The testing required that each soldier be tested on tracking before being tested on target acquisition. Both tests were conducted using a Willey Burst-On-Target Trainer, a device designed to simulate tank gunnery engagements. The sequence constraint was necessary to ensure equivalent practice on the Willey among all soldiers for the tracking test.

The introductory briefing and initial instructions for soldiers are in Appendix B. The procedures and test materials for the testing are presented in Appendices C through G and described briefly below. The tests are also summarized in Table 5, with the job requirements and criteria for which each was designed and descriptions of the variables from each test used in the analyses.

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[1] Although they had all been tested on the ASVAB (Version 8A, 8B, 9A, 9B, 10A or 10B) before their enlistment, this second administration was deemed necessary because parallelism of scores on the different forms of the ASVAB had not yet been established.

Table 5

Job Sample Tests, Test Requirements, Job Requirements, Training Criteria, and Variables

Job Sample	Test Requirement	Job Requirement	Training Criteria	Job Sample Test Variables
Tracking	Operate simulated gunner's controls to move sight reticle around and within the bounds of a diamond track (4 trials, alternating directions)	Operate tank controls to maintain sight reticle on a target	Main gun firing hits (moving targets)	Speed: (Total Trace/Time), trials 1-4 (TRKSPEED) Accuracy: (1-(Error Trace/Total Trace)), trials 1-4 (TRKACCY) Speed and Accuracy: ((1-(Error Trace/Total Trace))/Time), trials 1-4 (TRKSPAC)
Target Acquisition	Operate simulated gunner's controls to search scenes for partially hidden targets (16 scenes)	Operate tank controls to acquire targets	Main gun firing hits	Time: Average search time (ACQTIME) Accuracy: Proportions of 16 targets located (ACQHITS)
Fire Control Computer	Follow written instructions to enter and verify data in simulated fire control computer (11 data entries in 10 time segments)	Follow TM instructions to enter and verify data in the fire control computer	GATE tests on computer data check and self test	Time: Average time to enter and verify data on 10 segments (COMPTIME) Accuracy: Proportion of 11 entries correct (COMPACCY)
Technical Manual	Locate information in the TM index (3 items), on given pages (5 items), in given sections (5 items)	Locate and use information in the TM	GATE tests requiring use of the TM	Accuracy: Percent of 13 items correct (TMPERCNT)
Round Sensing	Sense the location of impact of simulated rounds fired at target scenes (16 scenes)	Sense the location of impact of fired rounds with respect to the target	Main gun firing hits (subsequent rounds)	Accuracy: Number of rounds sensed within a 2-grid radius of actual burst (RSENSE)

- Gunner Tracking. This was one of two tests for which soldiers had to use the Willey Burst-On-Target Trainer. A brief instruction and controlled practice session on the use of the Willey's gunner control handles was presented before the test began. For the test, the soldier used the control handles to move the sight reticle in his view within the bounds of a nearly diamond shaped track. Perspective in the scene provided the illusion of a three-dimensional view, as opposed to the two-dimensional figures used by Eaton et al. (1980).

  The scorer timed each of the soldier's trials. A plotter connected electrically to the Willey recorded a trace of each trial. The trace was later measured using a template of the track boundary to determine the total length of the trace and the length of the trace that fell outside the bounds of the track. The soldier's speed and accuracy on four trials were used in the analyses. If the soldier's time or tracing was not obtained for at least three of those trials, his scores were coded as missing.

  Tracking test materials are at Appendix C.

- Target Acquisition. This was a job sample analog of the object completion test reported by Eaton (1978). Slides of several scenes with partially hidden targets were prepared for the soldier's briefing. For the test itself, the soldier used the control handles to expose segments of 16 scenes while searching for the hidden target (tank, jeep, or APC) in each scene. The scorer timed the soldier from each target appearance until he "fired", and recorded whether or not he correctly located the target.

  The target acquisition test materials are presented at Appendix D.

- Fire Control Computer. This test was included to tap the soldier's ability to translate written instructions into appropriate actions for entering and checking data in the fire control computer. Instructions were prepared, using the M1 TM as a model, for the soldier to follow to enter various kinds of fire control data into a simulated fire control computer. Ten pieces of data were to be entered. Additionally, the computer always entered the last bit of data incorrectly, requiring that the soldier correct the error by clearing and entering the data again. The scorer recorded whether or not the soldier correctly entered the 10 data items and corrected the last one, and timed the soldier on each of the 10 procedures.

The computer test materials are at Appendix E.

- Use of the TM. The TM test had 13 items in three parts. The first three items tested the soldier's ability to use the TM index. The next part directed the soldier to turn to specific pages in the TM and therein to find the answers to five questions. The remaining five items required the soldier to find answers within a given section of the TM. The soldier's score was the percent of items answered correctly.

  The TM test materials are at Appendix F.

- Round Sensing. The round sensing task originally reported in Eaton et al. (1980) was considerably changed and reflected a greater point-to-point relationship with the criterion, ability to detect the impact location of a fired round.[1] The formerly binocular task was modified to monocular as would be required in a tank, and the improved response procedure did not require the trainee to change his field of view away from the target area. The soldier viewed various target scenes through a simulated gunner's sight. When he pressed the trigger on his power control handles, a red dot--the round burst--was superimposed on the target scene for one half second. The soldier then manipulated a handle to move a spotlight to the place where he perceived the burst. The scorer used a transparent grid overlay marked at 5 millimeter intervals to determine the two-coordinate deviation of the soldier's sensing from the true location of the burst. Any sensing within a 2-grid-square radius was scored as correct.

  The round sensing test materials are presented at Appendix G.

Class Performance Testing. During the fourth, eighth and thirteenth weeks of OSUT, soldiers were administered the Graduate Armor Tests (GATES). The first of these, GATE I, covered only non-Armor topics, and the scores were not used. GATES II and III tested Armor and M1-specific tasks; in OSUT I, 19 GATE tests covered a total of 54 M1 tasks, and in OSUT II 14 GATE tests covered 41 M1 tasks (listed in Appendix H). The tests were developed by the Training Design/Development Division of the Directorate for Training Developments, and scored by NCO from the Tests and Evaluation Branch of the Directorate of Plans and Training. The criterion score used was the proportion of GATE II and III tests for which the soldier passed all steps of all tasks on the first attempt.

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[1] Round sensing and subsequent fire adjustments are required only when the M1 tank is not fully operational.

The original intent was to obtain the number of steps passed on the fire control computer tests and on tests of tasks performed with the TM. Scores on steps passed were not provided for any tests, however. Furthermore, only one-third of OSUT I soldiers were tested on GATE tests of the fire control computer. And while many of the GATE tests required soldiers to use the TM (74% of the tests in OSUT I and 86% in OSUT II), there was no GATE test which was solely a test of skill on the TM. Plans to relate GATE and job sample tests of the computer and GATE and job sample tests of the TM were therefore modified; the two job sample tests would both be evaluated as predictors of total GATE test performance, because both job samples tests required soldiers to use the TM, and nearly all GATE tests required at least recollection of the TM, if not its actual use during testing.

Main Gun Firing (Table VII). For the first OSUT class, after GATE III, each soldier fired Tank Table VII, which consisted of one stationary tank engagement and five moving tank engagements. All targets were stationary, and were at ranges of 800 to 1200 meters. Observers located in the range control tower noted whether or not each round hit the target. Because the TC selected the targets for the moving engagements in random order, and because dust from the moving tank and from blast effects frequently obscured the targets, the observers were not always able to sense the rounds. Unsensed rounds were coded as missing data.

The observers in the tower were also able to listen to radio communications between TC and gunner, to measure opening times from when the TC announced "Gunner" to the firing of the main gun. Variations in TC fire commands and communications equipment malfunctions resulted in so many instances of missing times that this measure was dropped.

For the second OSUT class, after GATE III testing, soldiers fired 10 engagements, two from a stationary tank followed by eight from a moving tank; all were at stationary targets, at ranges of 800 to 1200 meters. Target hits were again scored by observers in the control tower.Cassette tape recorders were placed in each tank to record gunner/TC radio interactions for later scoring of opening times, but equipment malfunctions resulted in such a considerable loss of data that the measure was again dropped.

Hits were averaged for each soldier across all engagements for which data were obtained. If the number of engagements with data was less than four, the soldier's score was coded as missing.

It had been anticipated that engagements would include moving targets as well as moving tanks, and second rounds would be fired if the first missed. These would provide the appropriate criterion data for the tracking and round sensing job sample tests. However, the range allocated for soldiers' firing on Table VII had no moving targets, and all moving tank engagements required soldiers to fire while approaching the target; thus little or no tracking was required. Additionally, the TC did not have soldiers adjust fire if a round missed the target and thus no round sensing was required. Reports from TC also indicated that soldiers did not acquire targets as they would on the job, but rather the TC laid the gun crosshair on the target before relinquishing control to the gunner. Therefore, the job sample tests of tracking, target acquisition and round sensing were no longer specifically represented in the criteria. Despite these shortcomings in the firing data, the job sample tests were included in the analyses on the assumption that they still held promise as general measures of psychomotor behavior requiring hand-eye coordination.

Instructor Ranking. Subjective judgments of the soldiers' success in training were obtained in the form of instructor rankings at the end of training. This criterion was not specifically linked by hypothesis to any of the predictors, but rather was intended as a variable representing overall success in training as judged by instructors.

Each instructor of the training brigade (drill sergeants and TC) was asked to rank-order soldiers within platoons according to how he would select soldiers for his own tank crew (instructions are at Appendix I). Each of the six drill sergeants ranked only the soldiers in his own platoon (two drill sergeants for each of the three platoons), but the TC (seven in OSUT I and eight in OSUT II) ranked soldiers with whom they had worked within each of the three platoons. Thus each soldier had rankings from two drill sergeants, and from one to seven or eight TC. The rankings within each platoon from each instructor were linearly transformed to a 50-point scale, with 50 defined as the highest rating and 1 the lowest,[1] to eliminate differences in rank scores due solely to differing numbers of soldiers in the three platoons. Each soldier's rankings were then averaged across all TC and drill sergeants who had ranked him.

Composite Criteria. Two additional criterion variables were constructed based on the GATE scores, firing hits, and instructor rankings. One composite was computed as the sum of the standardized GATE scores and rankings, and another as the sum of standardized GATE scores, hits, and rankings. These were considered to be overall indicators of success in training, based on actual performance and instructor judgment.

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[1]The transformation of a rank of X on a scale of 1 to N, where 1 is the highest score, to a rank of X' on a scale of 1 to 50 where 50 is highest, is:

$$X' = 50 - \frac{(X - 1)}{(N - 1)} \cdot (49)$$

RESULTS

Data Descriptions

The sample distributions of the data were first examined for differences between the two OSUT classes in the distributions of predictor or criterion variables. Such differences would bring into question the representativeness of the samples and weaken generalizations to the population of soldiers or applications of results Army-wide. The means, standard deviations, and results of initial tests of differences are reported in Appendix J.

ASVAB Subtests and Composites. OSUT I soldiers had average scores that were about three points higher than the averages for OSUT II soldiers on four of the 10 ASVAB subtests: AR, PC, AS, and MK (see Table J.1). When the two OSUT groups were combined, four subtests (NO, CS, AS, and MC) had means significantly higher than the scaled subtest means of 50; the difference was less than two points for NO and from two to four points for CS, AS, and MC. Since the CO aptitude area score on which soldiers are selected for Armor includes these last three scales, it is not surprising (and not a problem) that the subtest scores are higher among M1 OSUT soldiers than in the Army population.

The two ASVAB aptitude area scores (CO and GT) were examined using the conversion to Army standard scores, and AFQT was examined using percentile scores. Converted scores were used so that they could be compared also to scores of soldiers Army-wide. There were no significant differences between OSUT I and OSUT II soldiers on mean scores for any of the three ASVAB composites (see Table J.2). For CO the Army standard score mean for OSUT I and OSUT II combined is four points higher than the scaled mean of 100 ($t = 3.235$, $p < .01$) and five points higher than an observed mean of 98.9 ($t = 4.237$, $p < .01$) for a recent Army-wide sample of nearly 8000 soldiers (Grafton, 1981). But again, because CO is the selection measure for these soldiers, it was expected that their mean CO would be higher than for the Army as a whole. When compared to a recently observed mean CO of 102.7 for a sample of 84 soldier trainees in another Armor specialty, Cavalry Scout (Grafton, 1981), the two point difference in the means is not significant ($t = .656$). The GT average for the combined OSUT does not differ significantly from the test mean of 100 ($t = .415$), the Army-wide mean of 99.0 ($t = 1.210$) or the mean of 101.40 ($t = .351$) for the sample of Cavalry Scout soldiers. On AFQT, soldiers in the two OSUT classes as a group scored very close to the 50th percentile.

Background and Personal Characteristics. Means and standard deviations for the background and personal characteristics are presented in Table J.3. Soldiers in both OSUT averaged about 37 points on the ABLE. OSUT I soldiers averaged three and a half years of high school, while OSUT II soldiers averaged three years, but the difference between them is not statistically significant.

Job Sample Tests. On the job sample tests, performances differed significantly between OSUT I and OSUT II soldiers on four of the nine variables (see Table J.4). Soldiers in OSUT II scored higher on tracking accuracy, being inside the track boundary for 68% of the total trace as compared to 63% for OSUT I soldiers, and on target acquisition accuracy, where they detected an average of nearly seven (of 16) targets, versus 5.5 for soldiers in OSUT I. Soldiers in OSUT I, on the other hand, scored higher on round sensing accuracy, locating an average of 9.6 rounds out of 20 as compared to 7.5 rounds for OSUT II soldiers, and on computer time, where they averaged about 8 seconds less (51 versus 59 seconds) for each computer procedure than did OSUT I soldiers.

Criterion Measures. Soldiers in OSUT I and OSUT II were not significantly different on the average GATE scores, with means of 88% and 90% respectively (see Table J.5). On GATE scores for TM tasks, the means were nearly equal, 91.9% for OSUT I and 91.6% for OSUT II. The groups are substantially different on main gun firing hits: OSUT I soldiers averaged about 66% hits on six engagements while OSUT II soldiers averaged nearly 80% hits on ten engagements. The difference does not appear to be due to the different number of engagements, in that OSUT II soldiers averaged 81% hits on their first six engagements.

The small differences between OSUT I and OSUT II in instructor rankings is artifactual, reflecting only differences in numbers of soldiers ranked by each instructor. Interrater reliabilities ranged from .75 to .90 (see Table J.6).

Because of the method of constructing the two criterion composite variables, by adding standardized scores of GATE scores and rankings or GATE score, ranking, and firing hits, the mean of each criterion composite for each OSUT is zero.

For both OSUT classes, the correlation of about .36 (see Appendix K) between GATE scores and rankings was significant. Instructors may have been influenced in their rankings by knowledge of soldiers' GATE performance, or by knowledge of soldiers' competencies which would also be reflected in GATE scores; in either event, the high correlations are neither unexpected nor undesirable. Neither GATE scores nor rankings were correlated with firing hits. The two composite variables were highly correlated with the variables they comprise, as well as with each other, in both OSUT (all $p < .01$).

Although some differences were discovered between OSUT I and OSUT II, they are not so large or so many as to preclude the planned analyses, but they may be expected to affect the results. In particular, differences on predictor or criterion scores make it less likely that predictor equations derived from data of one OSUT class will crossvalidate in the other OSUT. The absence of significant differences between OSUT soldiers and an independent sample of Armor trainees on CO, GT, and AFQT, and the numerically small differences on the four ASVAB subtests between OSUT and the scale means increases our confidence that the results will be generalizable to the Armor population and applicable Army-wide.

ASVAB Predictors of OSUT Success

Exploration of the use of ASVAB subtest scores for M1 OSUT began with stepwise multiple regressions of ASVAB subtests on each of the three original criterion measures and the two composite criteria. The analyses were performed separately for the two OSUT, in order that a double cross-validation could be conducted by applying any regression equations that emerged to the other OSUT. The equations were to be evaluated on the basis of how well they worked (i.e., significance of R) in both OSUT and whether they predicted better than selected existing ASVAB composites (CO, GT, or AFQT).[1]

Zero order correlations between ASVAB subtests and composites and the criterion variables for OSUT I and II are presented in Appendix K. For OSUT I, CO was the best of the ASVAB composites in predicting all criteria except firing hits; for OSUT II, AFQT was uniformly the best predictor, again except for hits. None of the three ASVAB composites was correlated significantly with firing hits. For the combined OSUT, CO was the best of the three in predicting all criteria.

The results of the five regressions, including regression weights and multiple R, are summarized in Table 6. The regression procedure identified predictors for GATE scores, rankings, and both combined criteria for both OSUT I and OSUT II, and for firing hits in OSUT I. No predictors were found for firing hits in OSUT II. No more than two subtests were selected for any of the regressions, but six of the ten subtests were chosen at least once. The four subtests comprised in the CO aptitude score (AR, AS, MC, and CS) never entered a regression together, although AS emerged as a predictor of GATE in OSUT II and with CS as a predictor of GATE in OSUT I, and MC (with NO) as a predictor of the combined GATE-hits-rankings criterion in OSUT I. The only result that was replicated--that is, appeared independently in both OSUT--is the selection of AS as a predictor of GATE scores. The regression derived predictor equations all have multiple correlations that exceed the zero order correlations of CO, GT, and AFQT with the criteria.

The first test of these regression derived predictors lay in their ability to predict criteria in an independent group of soldiers. Unit weighted predictions were made for each OSUT criterion as the sum of scores on subtests selected by the regression.[2] Unit weighted predictions are simpler, more robust, and less influenced by sample differences than regression weighted predictions, and tend to provide virtually the same results (Wainer, 1976). Each predicted criterion score was correlated with the obtained criterion score for each OSUT. Thus for each criterion measure two predictions were being evaluated: the unit weighted subtests from the

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[1] The multiple regressions were performed using the Statistical Packages for the Social Sciences (SPSS) New Regression procedure as presented in SPSS Release 7-9 (Hull & Nie, 1979). The method enters or removes predictors one at a time according to their multiple correlation with other predictors in the equation and with the criterion. The procedure stops when no additional predictors would add significantly ($\underline{p} < .05$) to the equation, and when no variable meets the criterion ($\underline{p} > .10$) for removal.

[2] Normally, construction of a unit weighted predictor involves adding standardized scores. Because ASVAB subtest scores are already standardized, with a mean of 50 and standard deviation of 10, the transformation was not made.

Table 6

Results of Stepwise Regressions of ASVAB Subtests on OSUT Criteria

OSUT I

Criteria	N	Predictor Equation[a]	R	R^2
GATE Scores	88	(.366)AS + (.197)CS	.434**	.189
Firing Hits	82	(.278)NO	.278*	.078
Instructor Rankings	88	(.275)MK + (.221)PC	.422**	.178
GATE-Rankings	88	(.396)AS + (.281)CS	.510**	.260
GATE-Hits-Rankings	82	(.323)NO + (.280)MC	.478**	.229

OSUT II

Criteria	N	Predictor Equation[a]	R	R^2
GATE Scores	58	(.358)AS	.358**	.128
Firing Hits	58	[no predictors]	-	-
Instructor Rankings	58	(.405)NO + (.253)EI	.508**	.258
GATE-Rankings	58	(.353)EI + (.347)NO	.530**	.280
GATE-Hits-Rankings	58	(.298)MK + (.286)AS	.461**	.212

[a]Regression weights for standardized subtest scores.

*p < .05.
**p < .01.

regression within an OSUT, and the unit weighted subtests from the regression in the other OSUT. The obtained correlations are presented in Table 7.

The prediction of GATE scores based on AS and CS crossvalidated from OSUT I to OSUT II with a coefficient of .298. Likewise the prediction of GATE scores using AS also crossvalidated from OSUT II to OSUT I with a coefficient of .388. The prediction of rankings using NO and EI, derived from OSUT II data, was also successful for OSUT I, but the prediction of rankings using MK and PC failed to crossvalidate from OSUT I to OSUT II. The prediction of firing hits using NO also failed to crossvalidate to OSUT II. The two combined criteria predictions were crossvalidated in both directions.

The results were sufficiently encouraging to continue the search for a set of subtests to challenge CO as the selector for M1 OSUT. CO, rather than GT or AFQT, was designated as the standard because it had overall the highest correlations with the criteria (Appendix K). The GATE scores were predicted for both OSUT by AS and CS, and instructor rankings by NO and EI. Additionally, the composite of GATE scores and rankings was predicted by both pairs of subtests. Because of these consistencies, because the prediction of firing hits was not possible for OSUT II, and because of the lack of consistency in predicting the composite of GATE scores, rankings, and hits, further analyses of ASVAB predictors focused on the prediction of GATE score and rankings. The next step involved combining the two sets of predictors from the separate regressions of GATE scores, rankings, and the composite in an attempt to identify a single set of subtests which could predict both GATE scores and instructor rankings. The four subtests--AS, CS, NO, and EI--were summed to form a composite labelled CO-M1. The distribution of this variable in OSUT I and OSUT II is shown in Table 8, along with its relationship to CO.

The CO-M1 sample statistics are very close to the CO values for both OSUT I and OSUT II--not surprising in view of their high correlation with CO, the overlap in subtests between CO-M1 and CO, and the high subtest intercorrelations. The average intercorrelation of the four subtests in CO is .332 for OSUT I and OSUT II; the average intercorrelation of the four CO-M1 subtests for OSUT I and II is .331.

The predictive power of CO and CO-M1 for GATE scores and ratings are also similar (see Table 9). In OSUT I, the correlations are higher for CO than for CO-M1, and in OSUT II correlations are higher for CO-M1. For the combined group of 146 soldiers in OSUT I and II, the correlations with CO-M1 are higher. None of these apparent differences between correlations using CO or CO-M1 is statistically significant. The squared correlations, which are often interpreted as the proportion of variance in the criterion accounted for by variance in the predictor, are higher by 2% for CO-M1 with GATE scores, and by 6% for CO-M1 with rankings and with the composites criteria.

Because a standardized CO score of 85 (equivalent to 178 unstandardized) is currently the selection criterion for Armor, and CO-M1 is highly

Table 7

Correlations Between Unit Weighted ASVAB Subtest Composites and OSUT Criteria

Criteria	Predictors Selected in OSUT I Regression	Correlation With Criteria in OSUT I (N=88)	Correlation With Criteria in OSUT II (N=58) (Crossvalidation)
GATE Scores	AS+CS	.425**	.298*
Firing Hits[a]	NO	.278*	-.055
Instructor Rankings	MK+PC	.422**	.204
GATE-Rankings	AS+CS	.511**	.431**
GATE-Hits-Rankings[a]	NO+MC	.478**	.381**

Criteria	Predictors Selected in OSUT II Regression	Correlation With Criteria in OSUT I (N=88) (Crossvalidation)	Correlation With Criteria in OSUT II (N=58)
GATE Scores	AS	.388**	.358**
Firing Hits	[no predictors]	-	-
Instructor Rankings	NO+EI	.301**	.502**
GATE-Rankings	EI+NO	.371**	.529**
GATE-Hits-Rankings	MK+AS	.406**	.461**

[a] N=82
*p < .01
**p < .05

Table 8

Descriptive Statistics and Intercorrelations for CO and CO-M1 (Raw Score)

	CO		CO-M1		
	Mean	Standard Deviation	Mean	Standard Deviation	Correlation
OSUT I	211.15	24.73	210.40	23.48	.840**
OSUT II	205.79	20.70	206.59	20.44	.792**
Combined OSUT	209.02	23.21	208.89	22.25	.826**

**$p < .01$.

Table 9

Correlations Between CO and CO-M1 and OSUT Criteria

OSUT I (N=88)	Correlations With		Corrected for Restriction in Range	
OSUT Criteria	CO	CO-M1	CO	CO-M1
GATE Scores	.411**	.390**	.492**	.465**
Instructor Rankings	.391**	.379**	.467**	.454**
GATE-Rankings	.486**	.466**	.572**	.546**
GATE-Hits-Rankings[a]	.440**	.444**	.523**	.526**
OSUT II (N=58)	**Correlations With**		**Corrected for Restriction in Range**	
OSUT Criteria	CO	CO-M1	CO	CO-M1
GATE Scores	.278*	.370**	.413**	.546**
Instructor Rankings	.256**	.506**	.383**	.752**
GATE-Rankings	.323**	.530**	.471**	.768**
GATE-Hits-Rankings	.378**	.470**	.539**	.665**
Combined OSUT (N=146)	**Correlations With**		**Corrected for Restriction in Range**	
OSUT Criteria	CO	CO-M1	CO	CO-M1
GATE Scores	.327**	.358**	.422**	.459**
Instructor Rankings	.339**	.421**	.436**	.539**
GATE-Rankings	.421**	.485**	.529**	.607**
GATE-Hits-Rankings[b]	.416**	.452**	.524**	.566**

[a]N=82
[b]N=140
*$p < .05$
**$p < .01$

correlated with CO, distributions along both scales are truncated at the low end.[1] Therefore, a correction for restriction in range was applied to the correlations (Lord & Novick, 1968). The corrections had the expected effect of raising the correlations (see Table 9) because the observed standard deviations of standardized CO scores were lower than the population value of 20 for both OSUT I and OSUT II. The increases in the combined group of soldiers are from .09 to .11 for CO and from .10 to .13 for CO-M1. The differences between CO and CO-M1 in terms of squared correlations with criteria are 3% for GATE scores, 10% for rankings, 9% for the GATE-rankings composite, and 5% for the GATE-hits-rankings composite, always in favor of CO-M1. Again, the differences between correlations CO and with CO-M1 are not statistically significant.

Thus there is some indication that CO-M1 may effect a modest improvement over CO in predicting M1 trainability. At the same time, there is no evidence in these data that CO is not itself an effective predictor, except that it is not correlated with firing hits for these soldiers.

Reading Skill and Biographical Data As Predictors of OSUT Success

The purpose of this second portion of the analysis was to look at reading ability and certain biographic variables that could augment the ASVAB composites (CO or CO-M1) in predicting training performance. Both CO and CO-M1 were included in the analyses because both had crossvalidated as predictors of GATE scores, rankings, and the two combined criteria. Because multiple regression often uncovers relationships that are not obvious by inspection of zero-order correlations, firing hits and the GATE-hits-rankings composite were included among the criteria even though none of the independent variables correlated with the criteria. The variables were reading level (ABLE scores), years of high school, age, dominant hand, and need for glasses. The correlations with the criteria are presented in Appendix K.

Multiple regressions were calculated for each of the five OSUT criteria: GATE scores, firing hits, rankings, the GATE-rankings composite, and the GATE-hits-rankings composite. The regressions forced CO or CO-M1 to enter the equation first and on successive steps entered or removed the other variables according to their predictive power and intercorrelations; the regression results are presented in Tables 10 and 11.[2] In OSUT I for all criteria there were no additional variables that significantly augment the prediction from CO alone or from CO-M1 alone. In OSUT II, CO is not a significant predictor of GATE scores or firing hits, and no variables were

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[1]Although the data include 13 soldiers who have CO scores below 178 (85 standardized), it should be remembered that these CO scores were not used for placement of soldiers into Armor, but only for research purposes. Lack of equivalence between the form used here and the form used for placement and lack of test-retest stability may account for the below minimum scores.

[2]The correlations between CO or CO-M1 and the criteria are different here than in Table 9 because of the difference in numbers of soldiers with sufficient data for the regressions.

Table 10

Results of Stepwise Regressions of CO, Reading Ability, and Biographic Data on OSUT Criteria

OSUT I (N=74) Criteria	Predictor Equation[a]	R	R^2	R^2ch[b]
GATE Scores	(.491)CO	.491**	.241	-
Firing Hits[c]	(.061)CO	.061	.004	-
Instructor Rankings	(.357)CO	.357**	.127	-
GATE-Rankings	(.513)CO	.513**	.263	-
GATE-Hits-Rankings[c]	(.452)CO	.452**	.204	-
OSUT II (N=57) Criteria	**Predictor Equation[a]**	**R**	**R^2**	**R^2ch[b]**
GATE Scores	(.255)CO	.255	.065	-
Firing Hits	(.149)CO	.149	.022	-
Instructor Rankings	(.147)CO + (.274)HSY	.335*	.112	.072
GATE-Rankings	(.164)CO + (.316)AGE	.405**	.164	.087
GATE-Hits-Rankings	(.340)CO	.340**	.116	-

[a]CO entered first. Regression weights for standardized variables.

[b]Increments to R^2 with CO alone.

[c]N=82.

*p < .05

**p < .01

Table 11

Results of Stepwise Regressions of CO-M1, Reading Ability, and Biographic Data on OSUT Criteria

OSUT I (N=88) Criteria	Predictor Equation[a]	R	R^2	R^2ch[b]
GATE Scores	(.439)CO-M1	.439**	.192	-
Firing Hits[c]	(.139)CO-M1	.139	.019	-
Instructor Rankings	(.327)CO-M1	.327**	.107	-
GATE-Rankings	(.464)CO-M1	.464**	.215	-
GATE-Hits-Rankings[c]	(.455)CO-M1	.455**	.207	-
OSUT II (N=58) Criteria	**Predictor Equation[a]**	**R**	**R^2**	**R^2ch[b]**
GATE Scores	(.351)CO-M1	.351**	.123	-
Firing Hits	(-.037)CO-M1	.037	.001	-
Instructor Rankings	(.469)CO-M1	.469**	.220	-
GATE-Rankings	(.498)CO-M1	.498**	.248	-
GATE-Hits-Rankings	(.437)CO-M1	.437	.191	-

[a]CO entered first. Regression weights for standardized variables

[b]Increments to R^2 with CO alone.

[c]N=82.

*p < .05

**p < .01

found to add to CO to yield a significant prediction. Rankings, on the other hand, are not reliably predicted from CO scores alone, but with years of high school added there is a significant prediction. And for the combined GATE-rankings criterion, CO is augmented by age. In both of these predictions, the contribution of the added variable is nearly twice the contribution from CO alone. When CO-M1 enters the predictions first, no other variables are added. In predicting hits, CO-M1 is not a significant factor.

To crossvalidate the prediction of rankings using CO and years of high school, and the GATE-rankings criterion using CO and age, unit weighted predictor composites were constructed as the sum of standardized predictor scores. The means and standard deviations used to standardize the predictor variables were derived from data of all soldiers from both OSUT, as these represented the most stable estimates. Both sets of predictors derived in OSUT II analyses had significant correlations with the relevant criteria in OSUT I (see Table 12). In fact, both unit weighted composites correlated highly with all criteria except firing hits in each OSUT. In the combined group of soldiers, the correlations between the four predictors--CO, CO-M1, CO plus years of high school, CO plus age--and the four criteria (GATE scores, instructor rankings, the GATE-rankings criterion and the GATE-hits-rankings criterion) were all significant, but none of the predictions from CO-M1, CO and age, or CO and high school was significantly better than the prediction from CO alone.

As with the predictions from ASVAB and ASVAB composites, the predictions using background information are able to improve slightly on CO (though not on CO-M1) for both OSUT. The improvements are not statistically significant, nor are they dramatic enough to be considered definitive at this point.

Job Sample Tests As Predictors of OSUT Success

The final set of analyses explored the potential contributions of job sample test variables to predictions of success in OSUT. The nine job sample test variables defined earlier (Table 5) were used. Preliminary examination first focussed on the zero order correlations between the computer and TM test variables and GATE scores, and between the tracking, target acquisition, and round sensing variables and the firing data (Appendix K). Computer speed was significantly correlated with GATE in OSUT I, but not in OSUT II; neither computer accuracy nor the TM test score was correlated with GATE scores in either OSUT. Among the psychomotor job sample test variables, only round sensing accuracy was correlated with firing hits, and that only in OSUT II.

For each of the five criterion measures, multiple regression procedures were used to determine whether any of the relevant job sample tests could add to the predictions from CO, CO and age, CO and years of high school, or CO-M1. For GATE scores, the computer and TM test variables were deemed relevant, and for firing hits the tracking, target acquisition, and round sensing variables were relevant. All job sample test variables were included in regressions on instructor rankings and on the two combined criteria. Four separate regressions on each criterion were used: one forced CO to enter the prediction first, the second entered CO and age first, the third forced CO and high school to be entered first, and the fourth forced CO-M1 in first. The relevant job sample test variables were then considered for possible contributions. In this way, the job sample tests acted on only that portion of

Table 12

Correlations Between Unit Weighted ASVAB and Background Composites, CO, and CO-M1, and OSUT Criteria

OSUT I (N=88)

Criteria	CO	CO + AGE	CO + HSY	CO-M1
GATE Scores	.411**	.304**	.425**	.390**
Firing Hits[a]	.068	.147	.086	.104
Instructor Rankings	.391**	.450**	.411**	.379**
GATE-Rankings	.486**	.463**	.507**	.466**
GATE-Hits-Rankings[a]	.440**	.471**	.457**	.444**

OSUT II (N=58)

Criteria	CO	CO + AGE	CO + HSY	CO-M1
GATE Scores	.278*	.354**	.278*	.370**
Firing Hits	.144	.080	.104	-.035
Instructor Rankings	.256**	.364**	.370**	.506**
GATE-Rankings	.323**	.433**	.392**	.530**
GATE-Hits-Rankings	.378**	.445**	.420**	.470**

Combined OSUT (N=146)

Criteria	CO	CO + AGE	CO + HSY	CO-M1
GATE Scores	.327**	.315**	.305**	.358**
Firing Hits[b]	.052	.096	.013	.036
Instructor Rankings	.329**	.371**	.378**	.421**
GATE-Rankings	.421**	.450**	.446**	.485**
GATE-Hits-Rankings[b]	.416**	.459**	.442**	.452**

[a] N=82.
[b] N=140.
$*p < .05$
$**p < .01$

variance in a criterion that was not already explained by the ASVAB and/or biographic data variables. In terms of utility, it addresses the predictive power of job sample test variables, given that soldiers are already screened on the basis of the ASVAB and/or biographic data variables. The results of the four regressions on each of the five criteria for both OSUT are summarized in Table 13 through 16.

Six of the job sample test variables entered the regressions. For OSUT I soldiers, computer accuracy[1] was entered for all four predictions of instructor rankings, and except for CO-M1, for all predictions of the GATE-rankings criterion. Computer accuracy also entered with computer time in all predictions of the GATE-hits-rankings criterion except with CO-M1. Tracking accuracy was a predictor of the GATE-rankings criterion with CO-M1. The four predictions of GATE scores did not draw in any job sample test variables, nor did the prediction of the GATE-hits-ranking criterion from CO-M1. The four regressions on firing hits yielded no significant predictions.

In OSUT II, computer accuracy was included in three equations to predict GATE scores, all except with CO-M1, and in two equations to predict the GATE-hits-rankings criterion. Round sensing was drawn into the remaining two predictions of the GATE-hits-ranking criterion, as well as into all four predictions of firing hits. Target acquisition time is a factor in two predictions of instructor rankings and in two predictions of the GATE-rankings criterion. Tracking speed was added to one prediction of instructor rankings. No job sample test variables were added to augment the prediction of the GATE-rankings criterion from CO and years of high school or from CO-M1; GATE score and instructor ranking predictions from CO-M1 were also not affected by the availability of job sample test variables. The amount of additional variance explained by the job sample test variables (the change in the squared correlation) ranges from 5% to 11% in both OSUT.

Crossvalidations of the unit weighted predictors (Table 17) for the 27 regression-derived predictor equations resulted in 22 significant cross-validation coefficients. The predictions that did not crossvalidate were the four involving round sensing and firing hits from OSUT II, and the prediction of instructor rankings from CO and computer accuracy from OSUT I.

At first glance, there would appear to be too many dimensions to the analyses to permit interpretation. There are two ASVAB predictors (CO and CO-M1), one of which is also augmented by two biographic variables (age or years of high school). These four, in predicting five criteria, drew in six job sample test variables in various configurations, among two groups of OSUT soldiers. But by considering the intercorrelations among the variables and the nature of the criteria, certain patterns begin to emerge. In these data, the computer accuracy variable was consistently associated with instructor

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[1]A reasonable explanation of the negative weight on computer accuracy is not immediately obvious; computer accuracy may be acting as a suppressor variable, by explaining variance in the other independent variables already in the equation that is not related to variance in the criteria, or may actually be inversely related to variance in the criteria which is not related to the other independent variables.

Table 13
Results of Stepwise Regressions of CO and
Job Sample Test Variables on OSUT Criteria

OSUT I Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	88	(.411)CO	.411**	-
Firing Hits	81	(.077)CO	.077	-
Instructor Rankings	87	(.469)CO - (.274)COMPACCY	.464*	.068
GATE-Rankings	87	(.543)CO - (.237)COMPACCY	.521**	.051
GATE-Hits-Rankings	81	(.383)CO - (.340)COMPACCY -(.274)COMPTIME	.530**	.099

OSUT II Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	58	(.345)CO - (.263)COMPACCY	.377*	.065
Firing Hits	58	(.167)CO + (.331)RSENSE	.360*	.110
Instructor Rankings	58	(.166)CO - (.299)ACQTIME	.383*	.082
GATE-Rankings	58	(.241)CO - (.273)ACQTIME	.415**	.068
GATE-Hits-Rankings	58	(.445)CO - (.266)COMPACCY	.458**	.066

[a]CO entered first. Regression weights for standardized variables.

[b]Increment to R^2 with CO alone.

*p < .05
**p < .01

Table 14
Results of Stepwise Regressions of CO, Age, and
Job Sample Test Variables on OSUT Criteria

OSUT I Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	88	(.421)CO + (.043)AGE	.413**	-
Firing Hits	81	(.036)CO + (.168)AGE	.180	-
Instructor Rankings	87	(.412)CO + (.223)AGE - (.264)COMPACCY	.512**	.063
GATE-Rankings	87	(.514)CO + (.112)AGE - (.232)COMPACCY	.532**	.048
GATE-Hits-Rankings	81	(.338)CO + (.197)AGE - (.338)COMPACCY - (.268)COMPTIME	.563**	.097

OSUT II Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	58	(.257)CO + (.228)AGE - (.257)COMPACCY	.432*	.062
Firing Hits	58	(.161)CO + (.017)AGE + (.353)RSENSE	.361	.106
Instructor Rankings	58	(-.004)CO + (.379)AGE - (.385)ACQTIME	.513**	.128
GATE-Rankings	58	(.060)CO + (.403)AGE - (.364)ACQTIME	.551**	.114
GATE-Hits-Rankings	58	(.275)CO + (.326)AGE + (.289)RSENSE	.527**	.078

[a]CO and Age entered first. Regression weights for standardized variables.

[b]Increment to R^2 with CO and Age.

* p < .05
**p < .01

Table 15
Results of Stepwise Regressions of CO, Years of High School, and Job Sample Test Variables on OSUT Criteria

OSUT I Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	88	(.386)CO + (.144)HSY	.435**	-
Firing Hits	81	(.069)CO + (.052)HSY	.093	-
Instructor Rankings	87	(.441)CO + (.149)HSY - (.272)COMPACCY	.487**	.067
GATE-Rankings	87	(.507)CO + (.190)HSY - (.234)COMPACCY	.553**	.050
GATE-Hits-Rankings	81	(.340)CO + (.201)HSY - (.358)COMPACCY -(.304)COMPTIME	.565**	.112

OSUT II Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	58	(.320)CO + (.118)HSY - (.268)COMPACCY	.394*	.067
Firing Hits	58	(.172)CO + (.025)HSY + (.333)RSENSE	.361	.109
Instructor Rankings	58	(.151)CO + (.278)HSY + (.271)TRKSPEED	.458**	.072
GATE-Rankings	58	(.272)CO + (.232)HSY	.394**	-
GATE-Hits-Rankings	58	(.399)CO + (.222)HSY - (.276)COMPACCY	.506**	.071

[a] CO and Years of High School (HSY) entered first. Regression weights for standardized variables.

[b] Increment to R^2 with CO and HSY.

* $p < .05$
** $p < .01$

Table 16
Results of Stepwise Regressions of CO-M1 and Job Sample Test Variables on OSUT Criteria

OSUT I Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	88	(.390)CO-M1	.390**	-
Firing Hits	81	(.116)CO-M1	.116	-
Instructor Rankings	87	(.424)CO-M1 - (.225)COMPACCY	.432**	.048
GATE-Rankings	87	(.394)CO-M1 + (.232)TRKACCY	.502**	.051
GATE-Hits-Rankings	81	(.431)CO-M1	.431**	-

OSUT II Criteria	N	Predictor Equation[a]	R	R^2ch[b]
GATE Scores	58	(.370)CO-M1	.370**	-
Firing Hits	58	(-.006)CO-M1 + (.319)RSENSE	.320	.101
Instructor Rankings	58	(.506)CO-M1	.506**	-
GATE-Rankings	58	(.530)CO-M1	.530**	-
GATE-Hits-Rankings	58	(.491)CO-M1 + (.237)RSENSE	.526**	.056

[a] CO-M1 entered first. Regression weights for standardized variables.

[b] Increment to R^2 with CO-M1.

*$p < .05$
**$p < .01$

Table 17

Correlations Between Unit Weighted Predictions Including Job Sample Test Variables and OSUT Criteria

Criteria	Predictors Selected in OSUT I Regressions	Correlations With Criteria In OSUT I(N=88)	Correlations With Criteria In OSUT II(N=58) (Crossval.)
GATE Scores	[no new predictors]	-	-
Firing Hits	[no predictors]	-	-
Instructor Rankings	CO - COMPACCY	.442**	.233
	CO + AGE - COMPACCY	.502**	.362**
	CO + HSY - COMPACCY	.468**	.369**
	CO-M1 - COMPACCY	.406**	.391**
GATE-Rankings	CO - COMPACCY	.475**	.363**
	CO + AGE - COMPACCY	.478**	.479**
	CO + HSY - COMPACCY	.516**	.445**
	CO-M1 + TRKACCY	.492**	.343**
GATE-Hits-Rankings	CO - COMPACCY - COMPTIME	.536**	.382**
	CO + AGE - COMPACCY - COMPTIME	.565**	.474**
	CO + HSY - COMPACCY - COMPTIME	.569**	.463**

Criteria	Predictors Selected in OSUT II Regressions	Correlations With Criteria In OSUT I(N=88) (Crossval.)	Correlations With Criteria In OSUT II(N=58)
GATE Scores	CO - COMPACCY	.342**	.368**
	CO + AGE - COMPACCY	.288**	.431**
	CO + HSY - COMPACCY	.384**	.367**
Firing Hits[a]	CO + RSENSE	.113	.347**
	CO + AGE + RSENSE	.168	.264*
	CO + HSY + RSENSE	.122	.269*
	CO-M1 + RSENSE	.143	.228
Instructor Rankings	CO - ACQTIME	.425**	.377**
	CO + AGE - ACQTIME	.481**	.469**
	CO + HSY + TRKSPEED	.334**	.453**
GATE-Rankings	CO - ACQTIME	.472**	.415**
	CO + AGE - ACQTIME	.481**	.524**
GATE-Hits-Rankings[a]	CO - COMPACCY	.452**	.428**
	CO + AGE + RSENSE	.472**	.526**
	CO + HSY - COMPACCY	.468**	.486**
	CO-M1 + RSENSE	.447**	.477**

[a]For OSUT I, N=82.
*p < .05
**p < .01

rankings of OSUT I soldiers, but with a negative weight. This occurred with CO and with CO-M1, and both with and without the biographic variables. Because CO and CO-M1 are so highly correlated, the key elements are narrowed down to CO aptitude, rankings, and a negatively weighted contribution from the computer accuracy score. Either computer accuracy is related to a portion of the CO score which is not related to rankings, or it is inversely related to a portion of the rankings variance which is not related to the CO aptitude measure. The former explanation is more plausible, that computer accuracy and CO score have something in common, such as reading or test taking skill, that is not a factor in instructor rankings. Black (1980) suggests that a high CO score reflects a high mental category. When the criterion included firing hits as well as rankings, computer accuracy was still a negative predictor, but computer test time also entered. The two computer variables are highly correlated, and overall the pattern suggests that the contribution to the prediction from the computer time score is only important when computer accuracy variance is removed. Speed on the computer test appeared to be largely a matter of repeating a constant sequence of steps for each procedure. Soldiers who picked up the rhythm by simple rote repetition were soon performing with only brief reference to the TM.

In OSUT II, computer accuracy was related to GATE scores, again with a negative weight. Extending the explanation given above, it would appear that CO and computer accuracy have in common something that is not a factor in GATE test performance, such as careful attention to detail; both the computer test and the ASVAB are strictly scored with no tolerance for performance that is only almost correct, while GATE tests were scored less exactingly. Target acquisition time tended to be associated with instructor rankings, which may reflect an underlying quick-decision dimension that is highly ranked. Round sensing was a recurring predictor of firing hits in OSUT II, but the relationship did not hold up for OSUT I soldiers. Statistically, this is probably because OSUT I soldiers were better on the round sensing task while OSUT II soldiers scored more hits in firing. The differences in firing accuracy as mentioned earlier, may be a function of different test conditions; possible causes of round sensing differences are not obvious.

An exploratory set of regressions focussed on only the job sample test variables as predictors of the OSUT criteria, as a check on the relationships described above. The regression results are presented in Table 18. Firing hits were not predicted by any of the job sample test variables among OSUT I soldiers. The tracking speed/accuracy measure emerged as the only predictor of GATE scores, and target acquisition time as the only predictor of instructor rankings. For the combined criterion of GATE scores and rankings, tracking accuracy and target acquisition time formed the equation, and for the three-criteria composite, the predictors were the two computer variables. Again, computer accuracy had a negative regression weight. For OSUT II soldiers, no predictors were found for GATE scores among the job sample test variables. Firing hits were predicted by round sensing accuracy alone and target acquisition time was selected as predictor for rankings (as in OSUT I) and for both composite criteria.

The crossvalidations of variables derived from regressions on OSUT I soldiers to data obtained from OSUT II soldiers failed for every relationship except for the prediction of rankings; target acquisition time was selected

Table 18
Results of Stepwise Regressions of
Job Sample Test Variables
on OSUT Criteria

OSUT I Criteria	N	Predictor Equation[a]	R	R^2
GATE Scores	87	(.339)TRKSPAC	.339**	.115
Firing Hits	82	[no predictors]	-	-
Instructor Rankings	87	-(.302)ACQTIME	.302**	.091
GATE-Rankings	87	(.279)TRKACCY - (.236)ACQTIME	.399**[b]	.159
GATE-Hits-Rankings	82	-(.472)COMPTIME - (.316)COMPACCY	.422**[c]	.178

OSUT II Criteria	N	Predictor Equation[a]	R	R^2
GATE Scores	60	[no predictors]	-	-
Firing Hits	60	(.325)RSENSE	.325**	.106
Instructor Rankings	60	-(.348)ACQTIME	.348**	.121
GATE-Rankings	60	-(.344)ACQTIME	.344**	.118
GATE-Hits-Rankings	60	-(.227)ACQTIME	.227*	.077

NOTE: For all one-variable predictor equations, the cross-validation coefficients for unit weighted predictors are identical to the zero order correlations in Appendix K.

[a]Regression weights for standardized variables.

[b]For the unit weighted predictor (- TRKACCY - ACQTIME), the correlation with the criterion in OSUT I is .396 ($p < .01$); in OSUT II it is .198 (p not significant).

[c]For the unit weighted predictor (- COMPTIME - COMPACCY), the correlation with the criterion in OSUT I is .398 ($p < .01$); in OSUT II it is .118 (p not significant).

*$p < .05$
**$p < .01$

as the only predictor of rankings for both OSUT, with correlations of .302 and .348. From OSUT II to OSUT I, round sensing accuracy as a predictor of firing hits did not crossvalidate, but target acquisition was significantly correlated with both composite criteria as well as with rankings. This is consistent with the results of regressions that included CO where target acquisition hits was linked with rankings, and round sensing was associated with firing hits for OSUT II soldiers.

The attempts to use job sample test data to augment ASVAB and background data predictions of training performance were no more or less successful than attempts using only the ASVAB or ASVAB plus biographic data. The moderate improvements to CO provided by job sample test variables were not statistically significant. But the majority of the predictions did crossvalidate, and certain predictors and criteria tend to be consistently associated.

Summary of Results

The three sets of regressions--ASVAB subtests, ASVAB composites with biographic data, and ASVAB composites with background data and job sample test data--produced the following results:

1. The regressions using ASVAB subtests yielded a set of two subtests (AS and CS) which correlated highly with GATE scores for both OSUT, and a second set (EI and NO) which predicted instructor rankings for both OSUT. The composite of the four subtests (labelled CO-MI) correlates higher than CO--but not reliably so--with GATE scores, rankings, and the combined GATE-rankings criterion for the combined OSUT.

2. When biographic data were considered as predictors to augment CO, both age and high school emerged as factors. The two variables are correlated in both OSUT, and it is likely that random error, to which multiple regression is highly sensitive, may be the reason that both, rather, than one or the other, is chosen.

3. Finally, the exploration of job sample tests, to determine whether they could enhance prediction of success in training, yielded a vast array of results. Six job sample test variables--two on the computer and four from the three psychomotor tests--improved ASVAB and biographic data predictions, some by as much as 15%; neither biographic nor job sample test variables correlated higher than the CO with the criteria. Certain relationships appeared consistently:
   - Computer accuracy and GATE scores.
   - Computer accuracy and instructor rankings.
   - Computer time (added to CO and computer accuracy) and firing hits (added to GATE scores and rankings).
   - Target acquisition time and instructor rankings.
   - Round sensing accuracy and firing hits (only in OSUT II).

DISCUSSION

Earlier research (Campbell & Drucker, 1981) examined the implications of setting various cut scores on CO on the distribution of GATE scores; the data used were the OSUT I data reported here. The conclusion at that time, based on those data, was that the current CO criterion of 85 (standardized) for entry into M1 OSUT should not be changed. With the larger data set explored here, there is little indication that a new aptitude composite (CO-M1) that includes tests of numeric operations rather than arithmetic reasoning and electronics information rather than mechanical comprehension would improve on CO in predicting training success. The predictions from CO-M1 are not significantly better than from CO, although they are consistently close.

However, such a composite has intuitive appeal for future use. As equipment, manuals, and job aids become more sophisticated, they take over many of the thinking processes formerly required of soldiers, particularly in algebraic manipulations. The soldier no longer uses formulas. He enters a table with certain parameters and finds the necessary solution. Or he enters the parameters into a fire control computer, and the answer is applied to his firing as a correction without him ever knowing it. In some cases he does not enter the input data; many inputs (e.g., crosswind, cant) are sensed automatically. Basic arithmetic, as measured by NO, may be all he needs. Furthermore, the increased sophistication of the M1 tank has relied on vast amounts of electronics equipment. A person familiar with electronics concepts, who does well on EI, may also be the person who quickly becomes comfortable with and proficient on his M1 tank.

But further research relating success in M1 OSUT to CO-M1 is needed before a recommendation to change the selection criterion is justified. This line of research should also be extended to other MOS in Armor (e.g., for Scout and M60 tank crewman training, because: (a) assignment of Armor soldiers trained on one Armor system or for one crew position to another system or position within Armor should not be further complicated by different aptitudes required in different Armor MOS; (b) a different selection criterion only for M1 OSUT would be cumbersome to implement; and (c) technological advances have also been made on other Armor systems such that CO-M1 may be an improvement over CO as an Armor training selector in general.

The addition of age or years of high school to CO seemed to be particularly effective in predicting instructor rankings, although both unit weighted models were also reliable predictors of GATE scores and the combined criterion. But what is the real predictor--maturity, perseverance, achievement motive, or level of education? Or do both enter by virtue of relationship to a third unexplored variable? These questions cannot be answered from the data.

The job sample testing results are not easily interpreted. There are indications that the approach is sound, although the desired point-to-point relationship between the job samples and actual performance was not achieved here. Somewhat mixed success has been experienced in using such tests to predict job performance (Eaton, 1978; Eaton et al., 1980). Additionally, the relationship between trainability and job performance has not been fully explored, and not at all for M1 crewmen. Follow-up of these soldiers after they are assigned to units would provide the opportunity to examine the relationship between job performance, trainability, and job sample testing.

Weaknesses in the present research should be mentioned so that results may be interpreted accordingly, and future work may be better planned. A significant and unavoidable problem concerns the nature of the criteria. Hypotheses concerning the prediction of soldiers' ability to operate the fire control computer could not be tested because a definitive criterion measure of that behavior could not be derived from GATE tests. Criteria against which to measure the predictive power of the TM job sample test were not available; GATE tests that did require soldiers to use the TM in fact required only that he read aloud given paragraphs in response to scorer questions. Main gun firing data, which were to serve as criteria for the three psychomotor job sample tests, were contaminated (from the researcher's point of view) by admirable (from the trainer's perspective) coaching and assistance from the TC, as well as the simple fact that range conditions did not provide for moving targets and the firing excercise required no tracking, round sensing, or target acquisition. It was, in fact, training and not a test. As such, it provided data that are likely neither valid nor reliable.

If these criteria are measures of what is meant by "success in training," then the conclusion is clear: use either CO or CO-M1 as the selector. These ASVAB composites were both correlated with GATE scores in both OSUT. But until training criteria can be more reliably measured, biographic information and job sample test results will be of little use in predicting trainability. The fact that the job sample variables did predict some of the variance in the criteria that was not explained by CO or CO-M1 indicates that research on job samples in the Army should not be considered complete.

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Appendix A

Biographic Questionnaire

BIOGRAPHIC QUESTIONNAIRE

NAME: ______________________ ______________________ ______ (1-30)

Last / First / Initial

SOCIAL SECURITY NUMBER: ___ ___ ___ - ___ ___ - ___ ___ ___ ___ (31-39)

(40-42)

1. What is the last year of High School you completed? (40)
   - Freshman ___1
   - Sophomore ___2
   - Junior ___3
   - Senior ___4
   - GED ___5

2. How many years of Vocational or Technical School have you completed? (41)
   - None ___0
   - One Year ___1
   - Two Years ___2
   - Three Years ___3
   - Four Years ___4

3. How many years of College have you completed? (42)
   - None ___0
   - One Year ___1
   - Two Years ___2
   - Three Years ___3
   - Four Years ___4

4. Do you usually wear glasses? Yes ___1 No ___2 Contact Lenses? Yes ___3 No ___4 (43)

5. How often have you played video games like Atari or Pong? (44,45)
   - Often ___3
   - A few times ___2
   - Never ___10

   How good were you? → Outstanding ___5, Pretty good ___4, Fair ___3, Poor ___2, Terrible ___1

6. How often have you been on amusement park rides like roller coasters? (46,47)
   - Often ___3
   - A few times ___2
   - Never ___10

   How sick did you get? → Very sick ___5, Just dizzy ___3, Not at all ___1

7. How often have you gone hunting? (48,49)
   - Often ___3
   - A few times ___2
   - Never ___10

   How good were you? → Outstanding ___5, Pretty good ___4, Fair ___3, Poor ___2, Terrible ___1

8. How often have you done target shooting at a stationary target like a bullseye panel? (50,51)
   - Often ___3
   - A few times ___2
   - Never ___10

   How good were you? → Outstanding ___5, Pretty good ___4, Fair ___3, Poor ___2, Terrible ___1

9. How often have you done target shooting at moving targets, like skeet or trap shooting? (52,53)
   - Often ___3
   - A few times ___2
   - Never ___10

   How good were you? → Outstanding ___5, Pretty good ___4, Fair ___3, Poor ___2, Terrible ___1

10. How often have you operated a computer terminal? (54)
    - Often ___3
    - A few times ___2
    - Never ___1

PT 5419

11. Do you have any military experience?

Yes ____ → Active Duty - How many years? ____ (55)

Reserves or NG - How many years? ____ (56)

Military Academy - How many years? ____ (57)

No ____ ROTC - How many years? ____ (58)

12. Why did you join the Army?

Want to have career in the Army ____ (59)

Want the education offered ____

Want the GI benefits ____

Couldn't find any other job ____

Other (Please Describe): ______________________________

13. Your Enlistment Contract includes your job (Armor) and unit of first assignment. What was the MOST IMPORTANT reason you wanted this contract?

I want to be in Armor ____ (60)

I want this unit of first assignment ____

I want the bonus ____

14. Are you right-handed or left-handed?

Right ____ (61)

Left ____

PT 5419

Appendix B

General Administrative Procedures and Materials For Job Sample Tests

GENERAL ADMINISTRATIVE PROCEDURES FOR JOB SAMPLE TESTS

SET UP

1. Ensure all scorers are ready.

2. Ensure all station equipment is ready, including intro tapes and stopwatches, including reading material in waiting area.

3. Ensure four Privacy Act Forms have been filled in with the station traffic flow information.

4. When soldiers arrive, have them remove and stow coats, rain gear, etc.

5. Play intro tape/slide in waiting area. Have soldiers complete Privacy Act Form.

6. Scorer takes the Form for the soldier who goes first to the scorer's station, escorts that soldier to the station.

   One soldier will begin at Station 5 (Use of the Manual). Either the Station 4 scorer or the driver may administer and monitor Station 5 for the first soldier.

7. As the soldier completes each station, the scorer should initial the soldier's form, return the soldier to the waiting area and put the form at the place designated for forms. The scorer should then check the forms already there to see if the next soldier is ready to be tested.

   NOTE: Restore station conditions, if necessary, before taking next soldier to the station.

8. Scorers should keep the completed scoresheets at their stations until they are collected by the test supervisor.

INITIAL INSTRUCTIONS FOR M1 OSUT SOLDIERS
FOR JOB SAMPLE TESTS

[SLIDE 1] This is the Army's new main battle tank, the Abrams M1. [SLIDE 2] [SLIDE 3] You are members of the first class of M1 OSUT soldiers at the Armor School at Fort Knox. As a part of your training you may participate in several special projects simply because you are a member of the first M1 class. You are here today to help us in one of those special projects. The people who work here are civilians, employed by the Army, to answer questions the Army has about who will perform well as an M1 tanker.

[SLIDE 4] The M1 tank contains many interesting pieces of equipment and you will learn more about them as you receive basic training. Today we want you to operate some equipment like that which the M1 gunner operates in his tank. Your performance scores will not go into your permanent records. They will be combined with the performance scores of other tankers and used for research purposes only. There are four different tasks which you will perform using these pieces of equipment.

[SLIDE 5] The Willey Burst-on-Target Trainer allows gunners to practice their target identification [SLIDE 6] and target tracking skills.

[SLIDE 7] The Allen round sensing device requires the gunner to locate a target, fire a simulated round of ammunition and [SLIDE 8] locate the point at which the round impacts.

[SLIDE 9] The M1 computer panel simulator allows the gunner to learn and practice the procedures necessary to prepare the main gun for firing [SLIDE 10]. Once the computer has been properly programmed, the gunner is ready to engage targets from his station.

[SLIDE 11] In order for the M1 tank crewman to obtain the information he needs to operate his tank he must become familiar with the M1 Technical Manual or TM. While you are in the Waiting Room between tasks we will give you a copy of one of the M1 Technical Manuals. The task we want you to perform involves finding specific information in the TM and writing it on the paper provided.

Tasks involving equipment are set up at four different locations or stations and the TM task is set up in the Waiting Room. You will be given a sheet of paper now which shows which station you go to first, second, third, and fourth. When you arrive at each station, the instructions for the task will be played for you on a cassette tape player. You should listen carefully to the instructions and do your best to follow them. If you have any questions, an instructor will be available to answer them.

On a sheet of paper showing the order in which you go to each station, you will find a place for you to print your name, social security number, and today's date. Please fill out this form now. Carry this sheet with you from station to station. Smoking is not allowed at the stations. However, smoking is allowed in the entrance hallway where ashtrays are provided. The men's room is located across the hall from station 4. Thank you.

GO TO EACH OF THE FOUR (4) LOCATIONS IN THIS ORDER:

	ORDER	COMPLETED
Report to Station #1	_____	_________
Report to Station #2	_____	_________
Report to Station #3	_____	_________
Report to Station #4	_____	_________
Waiting Room	_____	_________

NOTE

If you complete a station early, report to the Waiting Room.

FILL OUT THIS FORM (PRINTING) PLEASE:

NAME: ______________________________________
Last, First Middle Initial

SOCIAL SECURITY NUMBER: _ _ _ - _ _ - _ _ _ _

DATE:

YOU MAY KEEP THIS STATEMENT. WHEN YOU FINISH ALL STATIONS TEAR ALONG THIS DOTTED LINE

- -

- PRIVACY STATEMENT -

I understand that my participation in this research is voluntary. I further understand that I need not provide any personal information; that performance is only recorded for research purposes, and will not be put on my permanent record.

This is an experimental personnel data collection form developed by the U.S. Army Research Institute for the Behavioral and Social Sciences pursuant to its research mission as prescribed in AR 70-1. When identifiers (name or Social Security Number) are requested they are to be used for administrative and statistical control purposes only. Full confidentiality of the responses will be maintained in the processing of these data.

Appendix C

Tracking Task Materials

ADMINISTRATIVE PROCEDURES FOR TRACKING TASK

SET UP

Initial

1. Turn on plotter, then Willey. Do not move power control handles unless plotter is on.
   NOTE: Plotter must be firmly placed in socket to avoid pen chatter.

2. Ask test supervisor to make daily template.

Before Each Soldier

1. Set Willey to slide #1, the road scene.

2. Ensure plotter pen switch is in "UP" and sweep switch is in RESET.
   NOTE: Pen switch will remain in UP throughout. Reset/Sweep switch will be used to control pen lift.

3. Insert paper in plotter. Align to upper right corner guides.

4. Use power control handles to place crosshair at starting spot in lowest corner of track.

5. Ensure introductory tape is rewound.

6. Ensure stopwatch is charged. (Run off electricity if not.)

CONDUCT

1. Seat soldier. Adjust seat, browpad, focus if necessary.

2. Record name, SSN, date, and time on scoresheet.

3. Turn off overhead lights.

4. Run tape. Advance slides as indicated on tape:

   Slide 1 - road scene.

   Slide 2 - alley maze.

   NOTE: Follow the taped instructions explicity. Do not allow soldier more hands-on practice than is directed in the instructions.

   NOTE: After the introductory tape, if the soldier has questions about how to operate the power control handles, you may answer him. Do not allow additional practice.

5. Return to slide #1, road scene. Place crosshair at start point in lowest corner of track. Lower pen to paper by setting sweep switch to SWEEP to make start point mark, then raise pen (set sweep switch to RESET) and overmark start point. Lower pen to paper.

6. Say "Ready"; soldier should look through eyepiece and grasp power control handles.

7. Say "Track Left" or "Track Right."
   NOTE: Soldier should alternate left and right tracking. Begin tracking to the right.

8. Say "Begin" and start timing. Stop timing when soldier reaches the starting point area after one circuit.

9. Record the time and direction (right or left) on the scoresheet. Remove the paper from the plotter and label it with the trial number and direction (right or left).
   NOTE: Have the soldier back out of the sight while you record his score and set up the next trial.

   NOTE: If the soldier goes the wrong direction (right or left), change the direction on the next trial. Each soldier must have equal numbers of left and right circuits.

10. Insert paper in plotter, aligned to corner guides. Continue at step 4, for a total of 12 trials.

FINAL NOTES: If soldier asks how he's doing, say "We won't know how well anyone has done until everyone has been tested."

If soldier asks to see his tracing, say "You can see one later, after we've finished the test." Then let him see one when he's all done.

Do not tell soldier that the last trial is about to occur.

After last soldier, cap plotter pen.

Recharge stopwatch. Rewind intro tape.

INSTRUCTIONS TO SOLDIERS FOR THE TRACKING TASK

[SLIDE 1] This piece of equipment is called a Willey Burst-on-Target Trainer. It simulates the tank gunner's control handles and the picture he might see through his sight or eyepiece. Place your forehead against the padded bar and look through the gunner's eyepiece. You will see a road and some trees. Move your head slightly and adjust your seat until you can easily view the road and nearby trees. (P) In the sight picture you should also see a set of short lines in the form of a cross. These lines make up what is called a reticle. The center of the reticle is called the crosshair. The gunner uses the crosshair to aim the main gun at enemy targets. For this reason it is important that he be able to accurately control the movement of the crosshair.

Remove your forehead from the padded bar and look at the gunner's control handles. (P) Your task is to act as a gunner and use these control handles to move the reticle along the path of the road you saw in the sight picture.

Listen carefully and follow these instructions. [SLIDE 2] Place your hands on the gunner's control handles (P) and notice the palm switches located on these handles. Look into the eyepiece and squeeze the red palm switches; (P) slowly turn the control handles to the right. When you reach point B, return the control handles to their center upright position and release the palm switches. This will stop the reticle. (P) Squeeze the palm switches again and slowly turn the control handles to the left. When you reach point A, return the control handles to their center upright position and then release the palm switches. Back out of the sight and listen to these instructions about operating the gunner's hand controls. It is important that you stop the reticle by first centering the control handles and then releasing the palm switches. Releasing the palm switches first will cause the reticle to come to a fast stop and it may make it jump off the target. To move the reticle faster simply turn the control handles farther to the right or to the left. The farther you move them from the center upright position the faster the reticle will move.

Place your forehead back on the headrest and your hands on the gunner's control handles. (P) Move the reticle from point A to point C by simply squeezing the palm switches and "pulling" or rotating the top of the gunner's control handles toward your body. Return to point A by squeezing the palm switches and "pushing" or rotating the top of the gunner's control handles away from your body.

You can also move the reticle along a diagonal path up to point D in the sight picture by first squeezing the palm switches, then turning the control handles to the right while at the same time pulling the top of them toward your body. Stop when you reach point D. Now move the reticle back to point A by first squeezing the palm switches, then turning the control handles to the left while at the same time pushing them away from your body. Stop when you reach point A. For practice, move the reticle from point A to point D and back to point A again.

To move the reticle along the diagonal path from point A to point E first squeeze the palm switches, then turn the control handles to the right while at the same time pushing them away from your body. Stop when you reach point E. On your own, return to point A. Now, move the reticle from point A to point E again and back for practice. Please back out of the sight now. Do you have any questions about how the gunner's control handles operate? [SLIDE 1]

The task you are about to perform involves using the gunner's control handles to move the reticle along the path of the road you will see in the sight picture. Your task is to keep the center of the reticle, the crosshair, on the road. If the center of the crosshair touches the road side lines or edges you have made an error. You should try to move the reticle along the path of the road as quickly as you can while trying not to make any errors. Both your errors and your speed will be measured, so make as few errors as possible while moving as quickly as possible. The instructor will place the reticle at a point on the road and give you a "ready" command. You should then place your forehead on the padded bar and your hands on the hand controls. The instructor will then indicate the direction in which you are to move the reticle along the road by saying, "Track, right," or "Track, left." When the instructor says, "Begin," you should move the reticle along the road in the direction you were told to follow. After you have moved the reticle all the way around the road in the direction which you were told to go, stop the reticle when you return to the point at which you started. Remove your forehead from the padded bar and wait for the instructor to give the next "Ready" command.

Do you have any questions?

Figure C.1. Diamond Tracking Scene

NAME: ______________________

SSN: ______________________

DATE/TIME: ______________________

TRACKING TASK SCORE SHEET
(Remember: Counterbalance direction of track)

TRIAL NUMBER		TOTAL TIME	ERROR
1	R		
2	L		
3	R		
4	L		
5	R		
6	L		
7	R		
8	L		
9	R		
10	L		
11	R		
12	L		

Appendix D

Target Acquisition Task Materials

STATION 4

ADMINISTRATIVE PROCEDURES FOR
TARGET ACQUISITION TASK

SET UP

1. Turn POWER on Willey to ON.

2. Set projector to Slide #1. Move power control handles so tank is at left of screen and tree at right.

3. Set MAIN GUN and EL/TRAV POWER to ON.

4. Ensure intro tape is rewound.

5. Ensure stopwatch is charged. (Run off electricity if not.)

CONDUCT

1. Seat soldier, Adjust chair, browpad, focus if necessary.

2. Put name, SSN, date, and time on scoresheet.

3. Turn off overhead lights.

4. Run tape. Advance slides as indicated on tape:

   Slides 1,2,3 - easily identified tank, jeep, and APC, respectively.

   Slides 4,5,6 - less easily identified tank, jeep, and APC, respectively.

   Soldier should use power control handles to lay crosshair on each target.

   Slide 7 - large plus mark, used as reference point. Soldier should lay crosshair on center of plus mark ($\pm$ 1/8 inch).

5. Stop tape.

6. Have soldier look into eyepiece, put hands on power control handles.

7. Say, "Ready? Begin." On "Begin," advance (toggle on lower right side of Willey) to the first target slide and begin timing simultaneously.

8. Soldier should use power control handles to locate target and lay crosshair on target. Stop timing when the soldier fires (red blip at center of crosshair).

   NOTE: If soldier searches for over two minutes, say, "Locate what you believe to be the target and fire at it."

   NOTE: Some soldiers will fire on the move, and the crosshair will then overrun the target. Tell soldier, "Lay the crosshair on the center of the target, then fire."

9. Advance to bullseye slide. Leave this slide on only long enough to confirm a target hit (crosshair at or near center of bullseye) then advance to the plus slide.

   NOTE: If you need to leave the bullseye slide on for more than 1-2 seconds, have the soldier back out of the eyepiece.

   NOTE: Not all targets will fall in the center of the bullseye. The center of the bullseye indicates the approximate target location only.

10. Advance to the plus sign slide. Record hit or miss and time while soldier places crosshair on center of plus.

    NOTE: Small overruns from firing on the move should be counted as hits.

11. Continue with next target at step 5.

FINAL NOTES: Do not tell soldier when last target is being presented or how many targets remain. Do not return to previous trials and show soldier where targets are located.

Do not let soldier see his scoresheet, either during or after the test.

If the soldier asks how he's doing, say "We won't know how anyone did until everyone has been tested."

INSTRUCTIONS TO SOLDIERS FOR
TARGET ACQUISITION TASK

This task involves what Armor crewmen refer to as target acquisition. This simply means using the optical system or sights on the tank to locate targets. The targets you will be looking for are tanks (SLIDE 1) jeeps (SLIDE 2) and armored personnel carriers or APCs (SLIDE 3). During this task you will be shown a series of sight pictures which contain these target vehicles. However, each sight picture contains one and only one target vehicle. Locate one vehicle in each of the following slides, first slide, a tank (SLIDE 4), then a jeep (SLIDE 5), and finally an APC (SLIDE 6). Before each sight picture is presented there will be a slide containing a large "plus" mark (SLIDE 7). Use the gunner's control handles to place the reticle on the center of the plus mark each time it appears. Do this now. When the instructor says "begin" the actual sight picture will appear. Your task is to use the gunner's control handles to locate the target vehicle and then place the reticle cross-hair on the center of the target vehicle. After you locate the target or what you believe to be the target fire by simply squeezing the triggers which are under your left and right index fingers on the control handles. After you have fired, release the control handles. The instructor will determine whether or not you located the target and how long it took you to do so. As soon as the instructor presents the next "plus" mark, you should use the gunner's control handles to return the reticle to the center of that plus mark.

Do you have any questions?

TARGET LOCATIONS FOR
TARGET ACQUISITION TASK

1. JUST RT OF DUST/RETICLE
2. LEFT OF TREE AFTER DUST (SEE WHITE SHIRT)
3. RT SIDE OF RT ROAD
4. LEFT END OF LEFT ROAD (NOT TREE TOP ON RT) (UPPER LEFT)
5. RT END OF DUST ON ROAD
6. LEFT OF HOUSE ON UPPER LEFT OF ROAD (JUST ABOVE ROAD)
7. LEFT OF TURN ON RT ROAD (FROM BEHIND TREES)
8. LEFT END OF DUST
9. UPPER LEFT OF ROAD
10. DOT AT RIGHT TURN
11. UPPER LEFT OF RT ROAD (IN TREES)
12. UPPER LEFT OF RT ROAD (COMING OUT OF TREES)
13. BOTTOM RIGHT OF DUST
14. RT OF DUST (IN TREES)
15. BEHIND TREE AT RT OF DUST (SEE WHITE TUBE)
16. LEFT SIDE OF RT ROAD

NAME: ____________________

SSN: ____________________

DATE/TIME: ____________________

TARGET ACQUISITION TASK
SCORE SHEET

1) SEAT SUBJECT.

2) SET BROWPAD.

3) BEGIN INSTRUCTION TAPE.

SLIDE	HIT?		TIME?
1	Yes	No	
2	Yes	No	
3	Yes	No	
4	Yes	No	
5	Yes	No	
6	Yes	No	
7	Yes	No	
8	Yes	No	
9	Yes	No	
10	Yes	No	
11	Yes	No	
12	Yes	No	
13	Yes	No	
14	Yes	No	
15	Yes	No	
16	Yes	No	

Appendix E

Fire Control Computer Task Materials

STATION 2

ADMINISTRATIVE PROCEDURES FOR FIRE CONTROL COMPUTER TASK

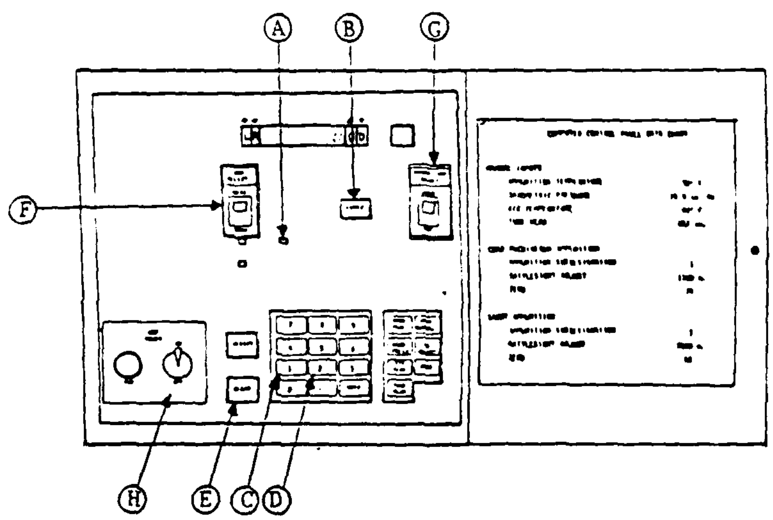
SET UP

Initial

1. Turn on computer (top back right).
2. Ensure tape is in Monroe 329 Player (on floor), side 1 up, rewound.
3. Press and latch READY on player.
4. Press JUMP (A), ENTER (B), and 1(C) on computer.
5. Press READ FROM TAPE on player. Tape will run for about 30 seconds.
6. Press 2 (D) on computer.
7. Press READ FROM TAPE on player. Tape will run for about 5 seconds.
8. Press STOP, then REWIND, then (when rewound) STOP on player.

Before Each Soldier

1. Press JUMP (A), ENTER (B), and ENTER (B) again.
2. Press CLEAR (E).
3. Set GUN SELECT (F) to COAX, AMMUNITION SELECT (G) to HEP, and CCP POWER (H) to OFF.
4. Close CCP door.
5. Close TM and place to left of computer.
6. Ensure intro tape is rewound.
7. Ensure stopwatch is charged. (If not, run off electricity..)



CONDUCT

1. Seat soldier.

2. Record name, SSN, date and time on scoresheet.

3. Play intro tape. Be sure soldier opens TM and computer door when instructed to do so on tape. Point out the data chart on the door, the seven data keys (I), the four control keys (B, E, J and K), the three switches (F, G and H) and the number keys when they are mentioned on the tape. Name the control keys, switches, and decimal.

4. When the tape is finished, stop the tape. If the soldier doesn't do anything, tell him to turn the page. Say "Follow the instructions in the TM (point). You may begin".

5. Start timing each procedure when the soldier presses a data key (I), and stop when he presses ENTER (B) the second time (when verifying).

6. Mark on the scoresheet when errors are made. If no errors are made, record only the time.

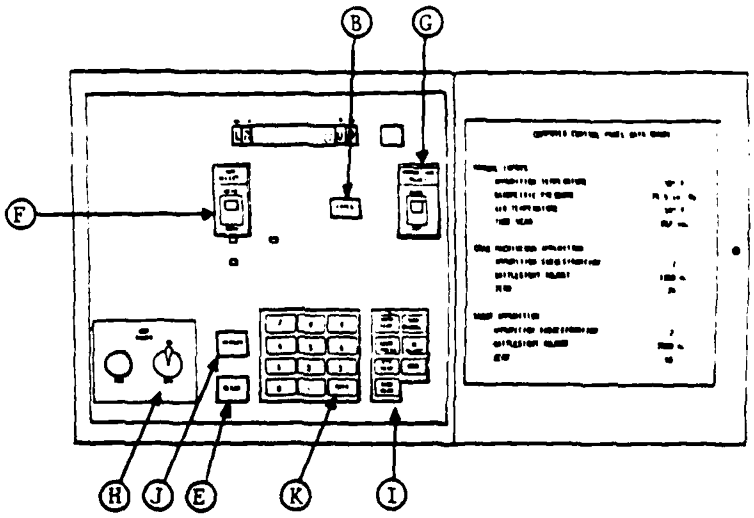
   a. Numbers - if soldier presses the wrong numbers, mark the scoresheet.

      NOTE: The correct numbers are on the scoresheet as well as on the computer door.

   b. Functions - if soldier presses the wrong data or control keys, or presses additional data or control keys, or omits any data or control keys, mark the scoresheet.

   c. Sequence - if soldier presses any sequence other than:
      Data key - Numbers - ENTER - VERIFY - DATA - ENTER
      mark the scoresheet.

   d. Found Error - if soldier makes any error (Numbers, Functions, or Sequence) and does not discover it, mark the scoresheet. (Also mark "Corrected".)



e. Corrected - if soldier makes any error, and does not correct it by pressing CLEAR (E) and the correct functions and/or numbers, mark the scoresheet.

NOTE: If the soldier asks how to correct the error, say "Error correction procedures are on the first page of the TM". Mark a "T" on the scoresheet (for "Told").

f. Six performance measures require the soldier to set switches. Mark them only if the soldier does not set them.

NOTE: If the soldier does everything correctly, or if his errors do not involve numbers or pressing the ENTER key more or less than twice, the display (L) will be blank for 3 seconds after the second ENTER with a "0.0" in the window (M), and then will show "0" or "0.0" or "0.000".

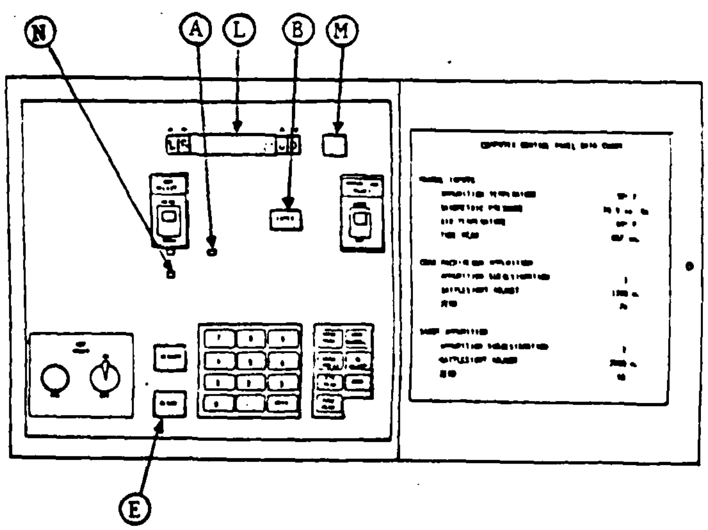
If the soldier makes an error on the numbers, the display will first show "0" or "0.0" or "0.000", then behave as described above.

If the soldier presses ENTER more or less than twice in a procedure, everything gets fouled up. Wait until he starts the next procedure (presses the appropriate date key) or sets the switch. Then have him wait while you press JUMP (A), the number of the next procedure (2-9, or 0, as shown on the scoresheet) and ENTER (B). Then tell him to continue, or if he's pressed a data key, to begin the procedure for [whatever] again at step one.

If the display shows "E-----", have the soldier wait while you press RESET (N), JUMP (A), the procedure number, and ENTER (B). Then tell him to begin again.

g. On the final procedure, ZERO for SABOT ammunition, the display will read "65" no matter what numbers the soldier enters. Mark the scoresheet for Numbers only if he did not press "68."

FINAL NOTE: If the soldier asks how he's doing, say, "We won't know how well anyone has done until everyone has been tested."



INSTRUCTIONS TO SOLDIERS FOR
FIRE CONTROL COMPUTER TASK

The new M1 tank has on board a small computer which assists the gunner in engaging targets. Before the computer can work correctly, the gunner must enter information into the computer's memory. This information is available to the gunner from his commander, but the gunner is the only one responsible for entering it correctly into the computer. He uses a technical manual, or TM, to tell him how to operate the computer.

The task we would like you to try today involves reading a TM and entering information into the computer in front of you. We could not get an actual M1 computer to use here, so we have simulated the buttons and switches using available materials. We want you to work at your own pace and do your best.

The directions for each step of the task can be found in the book in front of you. Please open this book now.

The M1 gunner's computer panel requires the gunner to manually ENTER and VERIFY several pieces of DATA each time he prepares his station for operation. This information is required by the computer in order for the rounds fired to hit the target. Four pieces of information are entered the same for all kinds of weapons and ammunition. They are:

Ammunition temperature,

Barometric pressure,

Air temperature, and

Main gun tube wear.

Three pieces of information must be entered separately for the coax machinegun and for each type of main gun ammunition. They are:

Ammunition subdesignation,

Battlesight adjust numbers, and

Zeroing numbers.

The gunner must take this information or DATA from the temperature gage, weather reports, operations reports, and the data chart inside the computer door, and enter it into the computer. This is always done in the same sequence or series of steps each time it is performed. The steps are:

Number 1. find the correct data

Number 2. enter it into the computer

Number 3. verify or check to make sure it went into the computer correctly

Number 4. if data did not enter the computer the way it should, then the gunner must correct it

The TM tells specifically how to enter, verify, and correct the data.

Open the computer panel door now. For the tasks you will perform today, all the data are on the data chart inside the computer door. The scorer will show you where the seven data keys, the four control keys, the three switches, and the number keys are located.

The following pages are like a TM. They will guide you in learning how to ENTER and VERIFY data in the M1 computer. When the scorer tells you to begin, you will follow the steps in the TM to ENTER the DATA from the computer door into the computer and VERIFY it. Pay close attention to the steps and do your best, but work at your own pace.

Once you begin the scorer will not be allowed to answer any questions. If you have a question please ask it now, before we begin.

TECHNICAL MANUAL

FIRE CONTROL COMPUTER

OPERATE COMPUTER

POWER UP COMPUTER

A. Set GUN SELECT switch (A) to MAIN.

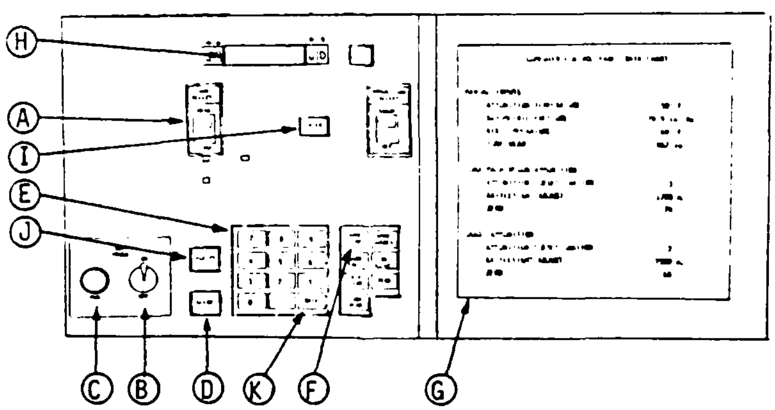
B. Set computer control panel (CCP) power switch (B) to ON and check PWR light (C) comes on.

> NOTE
>
> If an error is made, press CLEAR key (D) and enter correct data using number keys (E).

MANUAL INPUTS

A. Ammunition Temperature.

1. Press and release AMMO TEMP key (F).
2. Enter ammunition temperature reading from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.
3. Press and release ENTER key (I).
4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.
5. Enter ammunition temperature reading into computer by pressing ENTER key (I).



B. Barometric Pressure.

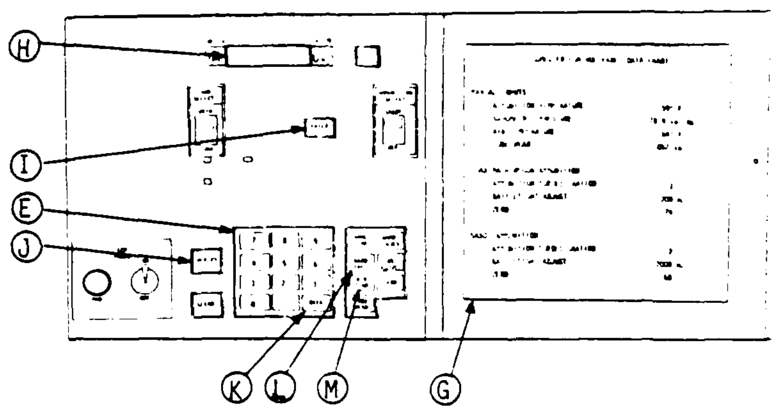
1. Press and release BARO PRESS key (L).

2. Enter barometric pressure reading from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.

5. Enter barometric pressure reading into computer by pressing ENTER key (I).



C. Air Temperature.

1. Press and release AIR TEMP key (M).

2. Enter air temperature reading from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys are pressed.

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.

5. Enter air temperature reading into computer by pressing ENTER key (I).

D. Tube Wear.

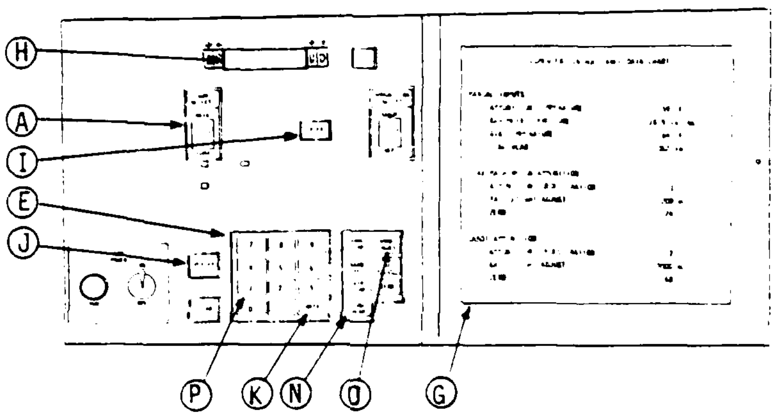
1. Press and release TUBE WEAR key (N).

2. Enter last tube wear numbers from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.

5. Enter tube wear into computer by pressing ENTER key (I).



COAX MACHINEGUN DATA

A. Set GUN SELECT switch (A) to COAX.

B. Coax Ammunition Subdesignation.

1. Press and release AMMO SUBDES key (O).

2. Press "1" key (P). Number will appear on display (H).

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as number entered.

5. Enter coax ammo subdesignation into computer by pressing ENTER key (I).

C. Coax Battlesight Numbers.

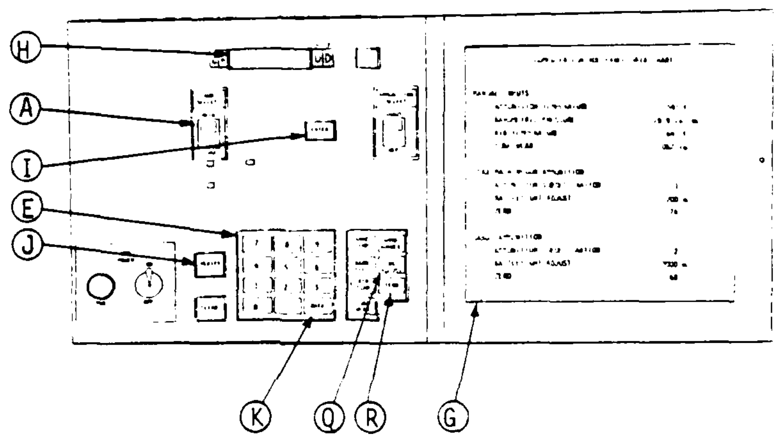
1. Press and release BS ADJUST key (Q).

2. Enter correct coax machinegun battlesight numbers from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.

5. Enter coax battlesight numbers into computer by pressing ENTER key (I).



D. Coax Zeroing Numbers.

1. Press and release ZERO key (R).

2. Enter coax machinegun zeroing numbers from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.

5. Enter coax machinegun zeroing numbers into computer by pressing ENTER key (I).

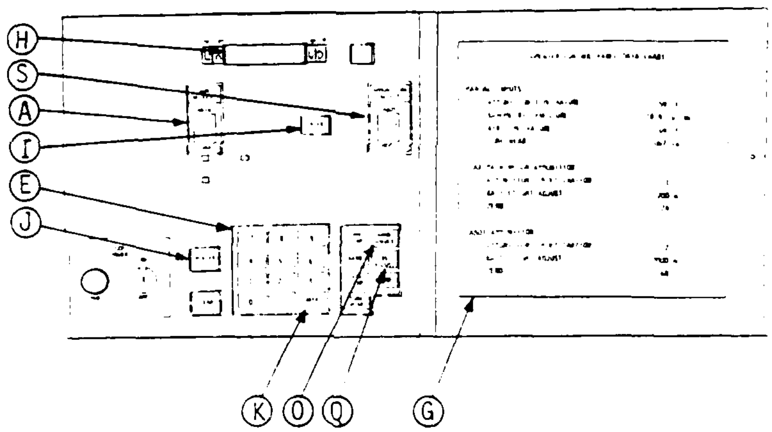
MAIN GUN AMMUNITION DATA

A. Set GUN SELECT switch (A) to MAIN.

B. Set AMMUNITION SELECT switch (S) to SABOT.

C. Sabot Ammunition Subdesignation.

1. Press and release AMMO SUBDES key (O).
2. Enter correct sabot ammunition subdesignation from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.
3. Press and release ENTER key (I).
4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.
5. Enter sabot ammunition subdesignation into computer by pressing ENTER key (I).



D. Sabot Ammunition Battlesight Numbers.

1. Press and release BS ADJUST key (Q).
2. Enter correct sabot ammunition battlesight numbers from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.
3. Press and release ENTER key (I).
4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.
5. Enter sabot ammunition battlesight numbers into computer by pressing ENTER key (I).

E. Sabot Ammunition Zeroing Numbers.

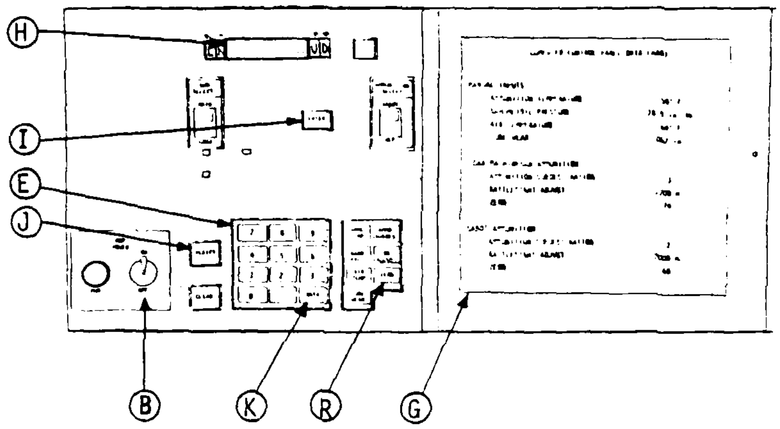
1. Press and release ZERO key (R).

2. Enter correct sabot ammunition zeroing numbers from data chart on computer panel door (G) into computer by pressing appropriate number keys (E). Numbers will appear on display (H) as keys (E) are pressed.

3. Press and release ENTER key (I).

4. Press and release VERIFY key (J) and DATA key (K). Check that display (H) reads same as numbers entered.

5. Enter sabot ammunition zeroing numbers into computer by pressing ENTER key (I).



F. Turn power switch (B) to OFF.

NAME: ____________________

SSN: ____________________

DATE/TIME: ____________________

FIRE CONTROL COMPUTER SCORESHEET

N.B. Check line only for error!

PROCEDURE

Set GUN SELECT to MAIN ___

Set CCP POWER to ON ___

(ENTER) AMMO TEMP (59)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
2. BARO PRESS (28.9)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
3. AIR TEMP (64)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
4. TUBE WEAR (.067)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
Set GUN SELECT to COAX ___				
5. AMMO SUBDES (1)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
6. BS ADJUST (1200)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
7. ZERO (74)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
Set GUN SELECT to MAIN ___				
Set AMMO SELECT to SABOT ___				
8. AMMO SUBDES (2)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
9. BS ADJUST (2000)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected	___
	Sequence ___			
		(1-5) Time: ______		
0. ZERO (65) (68)	Numbers ___	If checked:	Found error	___
	Controls ___		Corrected:	___
	Sequence ___			
		(1-5) Time: ______		

Appendix F

Technical Manual Task Materials

STATION 5

ADMINISTRATIVE MATERIALS FOR
TECHNICAL TASK

CONDUCT

NOTE: One soldier will be tested at the beginning of each test period. The other three soldiers will be tested when they have completed Stations 1 through 4.

1. Seat soldier at work area (desk). If more than one soldier is tested at a time, be sure soldiers are outside each other's field of view.

2. Give each soldier a TM. If only one soldier is being tested, use TM-A, for the M1 Abrams tank.

3. Read the instructions.

4. Hand out pencils. Hand out tests, being sure to match test version and TM version. Have soldiers check to verify match.

5. Have soldiers enter names on tests.

6. Monitor station at all times any soldier(s) is (are) being testes: no talking, no moving around, no looking around.

7. After 20 minutes, stop the test.

INSTRUCTIONS TO SOLDIERS FOR THE TECHNICAL MANUAL TASK

Much of the information which the M1 tank crewman needs is found in a technical manual, or TM. The TM presents information on the tank's equipment and how to operate it, on maintenance, and on ammunition.

Reading a TM and finding the information that you need in it is different from most reading tasks because the content is more technical. The task we want you to perform here involves finding specific information in the TM. The information you must find is asked for on performance sheets which the monitor will give you. Your performance will be evaluated on correct answers, so work carefully.

Before you begin, check to make sure that the letter (A, B, or C) on your performance sheets is the same as the letter on your TM.

When you are finished, give your performance sheets to the monitor. Do you have any questions?

Name ______________________

A

SSN ______________________

Date ______________________

USE OF THE

TECHNICAL MANUAL (TM) 9-2350-255-10

(APRIL 1981)

FOR THE M1 (GENERAL ABRAMS) TANK

I. USE OF THE INDEX

The Index for the TM is in the back of the book. Use the Index to find the page number or page numbers where the following topics are covered.

EXAMPLE: Muzzle reference system (MRS) update: 2-207

This means that the MRS update is found on page 207 of Chapter 2.

1. Hydraulic system accumulator pressure check: ____________

2. Transferring fuel: ____________

3. Crew compartment automatic fire extinguisher: ____________

II. READING THE TM (A)

The laser rangefinder (LRF) is described on page 1-36 of the TM.

4. How close can a target be for the LRF to be able to range to it? ____________

5. How far away can a target be for the LRF to be able to range to it? ____________

The procedure for starting the engine in extreme cold is described on page 2-320 of the TM.

6. If the engine does not start in extreme cold after the first attempt, how long must you wait before trying again? ____________

7. How many attempts (total) can you make? ____________

The procedure for immediate action for loss of engine power is described on page 2-387 of the TM.

8. Without engine power, how should you stop the tank when moving less than 3 mph? ____________________

A

III. READING THE TM (B)

The Performance Data specifications begin on page 1-16 of the TM.

9. What is the M1's maximum forward speed? ______________

10. How many rounds of main gun ammunition does the M1 tank carry? _______________

The Preventive Maintenance Checks and Services Table begins on page 2-35 of the TM.

11. How often should you check the transmission oil level?
____

12. How often should you check the driver's gas particulate filter equipment? ________________

The Pre/Post Firing Maintenance Checks and Services Table begins on page 2-63 of the TM.

13. When checking the commander's GPS extension, what indicates that the equipment is not ready? ___________________________

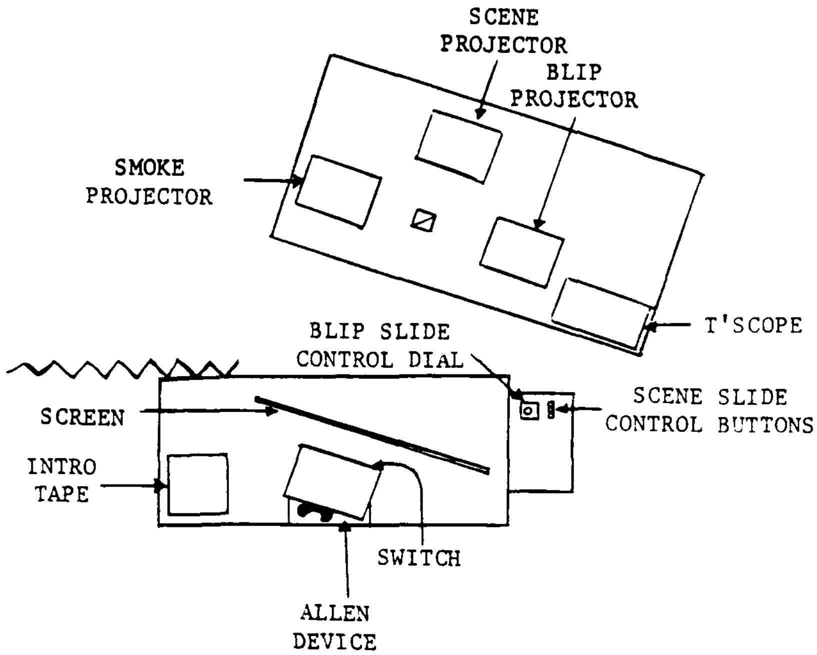
Appendix G

Round Sensing Task Materials

STATION 3

ADMINISTRATIVE PROCEDURES FOR ROUND SENSING TASK

Set-Up
Initial



1. Turn SMOKE Projector on to LAMP.

2. Turn SCENE Projector on to LOW.

3. Turn TIMER on BLIP Slide Control Dial to ON.

4. Turn ON T'scope toggle (lower right).

Before each Soldier

1. Set SCENE Projector to slide #1.

2. Set BLIP Slide Control Dial to 2 (red light on).

3. Set Intro. to slide #1 and rewind tape.

CONDUCT

1. Seat soldier. Adjust chair and browpad if necessary.

2. Put name, SSN, date, and time on scoresheet.

3. Run tape: turn POWER switch ON, press PLAY. (When done, press STOP.) Make sure soldier sees power control handles, trigger (left), and spotlight control handle (right) when they're mentioned on the tape. If he has questions, play tape again.

4. Turn off overhead light (middle switch). Turn on spotlight (toward screen) in Allen Device. Have soldier look into eyepiece.

5. Point to target area, as diagrammed on scoresheet. (Say "This is the target area.") Do not touch screen!

6. Press button on dial (red light off). Tell soldier "Fire when ready."

7. If necessary, tell him to move spotlight onto where red blip was. Wait for him to say "On" or "Lost."

8. If he says "On" (make sure he lets go of spotlight handle):

   a. Press OPEN button on T-scope (lower left).

   b. Lower the grid overlay. Make sure it touches screen.

   c. Count squares from red; do left (-) or right (+) first, then down (-) or up (+).

   d. Record on scoresheet.

   e. Raise grid.

   f. Turn T-score toggle off (lower right) for 2-3 seconds, then on again.

   NOTE: Listen for click from smoke projector when T-scope toggle is turned on. If you don't hear the click, repeat step f, being sure to wait at least 3 seconds.

   g. Turn dial to next number (as on scoresheet). Red light comes on.

   NOTE: Be sure T-scope toggle is on before turning dial to next slide.

   h. If next scene required (as indicated on scoresheet), press left gray button (below dial). Point out new target area.

9. If he says, "Lost," mark "LOST" on the scoresheet and go to next round, step 8g above. If the first round is Lost, show blip to soldier (step 8a above) and continue at step 8f above.

10. Have subject lower spotlight to bottom of scene. Go to step 6.

    FINAL NOTE: If the soldier asks how he's doing, say "We won't know how well anyone has done until everyone has been tested."

INSTRUCTIONS TO SOLDIERS FOR THE ROUND SENSING TASK

[Slide 1] This equipment is designed to simulate the firing of a round of ammunition from an M1 Abrams tank. Your task will be to locate where the round hits in relation to the target. To do this, you must learn how this equipment operates. [Slide 2] Listen carefully to the following instructions and observe the slides being presented.

When you begin you will place your head on the headrest [Slide 3] and look into the sight. [Slide 4] (If you prefer to use your left eye please tell the instructor now.) [Slide 5] When you look through the sight you will see a tank range containing several targets. [Slide 6] Targets are square panels. Some are white, while others are black. Do you see the targets in this tank range slide? The instructor will show you the proper target area. Next, you will place your left hand on the gunner's control handles. [Slide 7] When you are told to "Fire" you will squeeze the left trigger on the gunner's control handles using your left index finger. [Slide 8]

After you squeeze the trigger, you will see smoke in the sight picture and then a small red dot will flash. [Slide 9] This red dot simulates the impact of the round, that is, it appears like the round has hit the target or some nearby object. Do you see the red dot on this range slide? Remember it will flash on and then go off very quickly so you must pay close attention to the location where you saw it hit.

Continue to focus your eye on the spot where you saw the round hit. Place your right hand on the spotlight control handle. [Slide 10] Move the spotlight slowly up until it is centered exactly over the spot where you saw the round hit. Release the spotlight handle. Make sure the spotlight remained where you placed it. If it did not, adjust it until it does, then release the spotlight handle and tell the instructor you have located the spot by saying "On." Once you have released the spotlight handle and said "On", remove your head from the headrest. Do not touch the spotlight handle or gunner's control handles until the instructor has recorded your score.

If for any round you do not see the red blip after you fire, say "Lost." If you think you saw the red blip, but you aren't sure, you should lay the spotlight where you think you saw it. Your performance on this task will not be timed.

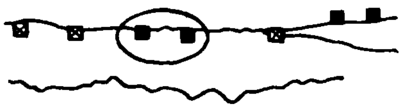
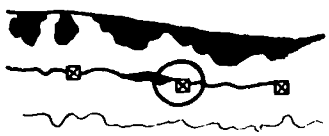
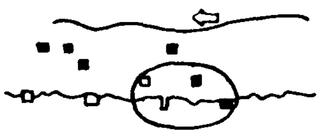
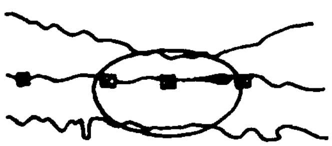
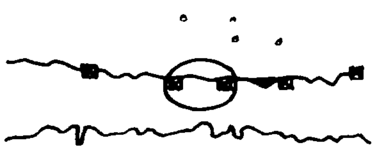
When the instructor says "Ready", return the spotlight handle to its bottom position, [Slide 11] place your head on the headrest, [Slide 12] locate the target area in the sight picture [Slide 13] then place your left hand on the gunner's control handle [Slide 14] and your right hand on the spotlight control handle. [Slide 15] Do <u>not</u> fire the next round until the instructor gives you the "Fire" command. Do you have any questions?

ROUND SENSING SCORE SHEET

NAME: ______________________

SSN: ______________________

DATE/TIME: ______________________

TARGET AREA	TARGET SLIDES	ROUND	DEFLECTION HORIZ	DEFLECTION VERT
	1	2		
		3		
		4		
		5		
		6		
	2	7		
		8		
	3	9		
	4	10		
		11		
	5	12		
		13		
	6	14		
		15		
		16		
		17		
	7	18		
		19		
		20		
		21		

Appendix H

OSUT GATE Tests and Tasks

Table H.1

GATE Tests And Tasks
OSUT I

GATE II

CLEAR M240 MACHINEGUN

PERFORM OPERATOR'S MAINTENANCE ON AN M240 MACHINEGUN
- Disassemble M240
- Assemble M240
- Perform Function Check

TROUBLESHOOT DRIVER'S CONTROL PANEL (Written Test)*
- Identify Table
- Master Warning Lights
- Parking/Service Brake Lights
- Cable Disconnect Light

PERFORM FUEL TRANSFER PROCEDURES*

EXTINGUISH A FIRE ON AN M1 (3 Versions)*

PREPARE DRIVER'S STATION FOR OPERATION*
- Prepare Driver's Station
- Operate Personnel Heater

START AND STOP THE ENGINE OF AN M1 TANK*
- Start Engine
- Stop Engine

OPERATE GAS PARTICULATE FILTER UNIT ON M1 TANK*
- Don Protective Mask
- Operate Gas Particulate Filter Unit

SECURE DRIVER'S STATION*

GATE III

CLEAR CAL .50 M2 MACHINEGUN

MAINTAIN CAL .50 M2 MACHINEGUN
- Disassemble M2
- Assemble M2
- Perform Function Check

SET HEADSPACE AND TIMING ON M2 MACHINEGUN

---

*Tested using the TM.

Appendix H

OSUT GATE Tests and Tasks

Table H.1 (Cont'd.)

PREPARE LOADER'S STATION FOR OPERATION*
- Erect Crosswind Sensor
- Install Loader's Machinegun
- Enter Loader's Station
- Power Up Loader's Station
- Adjust Loader's Seat and Platform
- Operate Loader's Hatch
- Position Loader's Guards for Firing

SECURE LOADER'S STATION*
- Stow Loader's Guards
- Power Down Loader's Station
- Remove Loader's Machinegun
- Secure Crosswind Sensor
- Secure Antenna
- Secure Loader's Hatch

LOAD/UNLOAD 105MM MAIN GUN ON M1 TANK*
- Load Main Gun
- Clear Main Gun

LOAD/UNLOAD M250 GRENADE LAUNCHER ON M1 TANK*
- Load Grenade Launcher
- Unload Grenade Launcher

PREPARE GUNNER'S STATION FOR OPERATION ON M1 TANK*

Version A:	Enter Station, Operate Domelight and Intercom
	Install Coax Machinegun
	Adjust Gunner's Seat, Browpad, and Chestrest
	Power Up Gunner's Station
Version B:	Perform GPS Check
	Adjust GPS
	Perform Computer Self-Test
	Perform Computer Data Check
	Perform GAS Adjustment
Version C:	Perform TIS Checkout
	Perform Lead System Check
	Perform Firing Circuits Check
	Perform Crosswind Sensor Check

SECURE GUNNER'S STATION ON M1 TANK*
- Power Down Gunner's Station
- Secure Gunner's Station

PERFORM PREVENTIVE MAINTENANCE CHECKS AND SERVICES ON M1 TANK*

Version A:	Perform Before Operations PMCS (Items 2-9)
Version B:	Perform During Operations PMCS (Items 10-12)
Version C:	Perform After Operations PMCS (Items 32-35)

*Tested using the TM.

Table H.2

GATE Tests And Tasks
OSUT II

GATE II

CLEAR M240 MACHINEGUN

PERFORM OPERATOR'S MAINTENANCE ON AN M240 MACHINEGUN
- Disassemble M240
- Assemble M240
- Perform Function Check
- Load M240

TROUBLESHOOT DRIVER'S CONTROL PANEL*
- Identify Table
- Master Warning Lights
- Parking/Service Brake Lights
- Cable Disconnect Light

EXTINGUISH A FIRE ON AN M1 (3 Versions)*

PREPARE DRIVER'S STATION FOR OPERATION*

OPERATE GAS PARTICULATE FILTER UNIT ON M1 TANK*

SECURE DRIVER'S STATION*

PERFORM PREVENTIVE MAINTENANCE CHECKS AND SERVICES ON M1 TANK*
- Version A: Perform Before and During Operations PMCS (Items 14-23)
- Version B: Perform After and During Operations PMCS (Items 1-7)

GATE III

PREPARE LOADER'S STATION FOR OPERATION*
- Erect Crosswind Sensor
- Install Loader's Machinegun
- Enter Loader's Station
- Power Up Loader's Station
- Adjust Loader's Seat and Platform
- Operate Loader's Hatch
- Position Loader's Guards for Firing

SECURE LOADER'S STATION*
- Stow Loader's Guards
- Power Down Loader's Station
- Remove Loader's Machinegun
- Secure Crosswind Sensor
- Secure Antenna
- Secure Loader's Hatch

*Tested using the TM.

Table H.2 (Cont'd.)

LOAD/UNLOAD 105MM MAIN GUN ON M1 TANK*
- Load Main Gun
- Clear Main Gun

LOAD/UNLOAD M250 GRENADE LAUNCHER ON M1 TANK*
- Load Grenade Launcher
- Unload Grenade Launcher

PREPARE GUNNER'S STATION FOR OPERATION ON M1 TANK*
- Perform GPS Check
- Adjust GPS
- Perform Computer Self-Test
- Perform Computer Data Check
- Perform GAS Adjustment

SECURE GUNNER'S STATION ON M1 TANK*
- Power Down Gunner's Station
- Secure Gunner's Station

*Tested using the TM.

Appendix I

Instructions to Drill Sergeants and
Tank Commanders for Soldier Ratings

Instructions to Drill Sergeants and Tank Commanders for Soldier Ratings

HERE ARE THREE STACKS OF CARDS. EACH STACK CONTAINS THE NAMES OF THE MEN IN ONE OF THE THREE PLATOONS THAT JUST FINISHED M-1 OSUT. BASED ON YOUR KNOWLEDGE OF THESE MEN, PLEASE ARRANGE THE NAMES IN EACH STACK IN THE ORDER THAT YOU WOULD SELECT THE MEN AS MEMBERS OF YOUR OWN M-1 CREW. THOSE THAT YOU WOULD MOST LIKE TO HAVE IN YOUR CREW SHOULD BE AT THE TOP OF THE STACK, WHILE THOSE THAT YOU WOULD LEAST LIKE TO HAVE IN YOUR CREW SHOULD BE AT THE BOTTOM. DO YOU HAVE ANY QUESTIONS?

Appendix J

Means and Standard Deviations
of Predictors and OSUT Criteria

Table J.1

Descriptive Statistics for ASVAB Subtests

Subtest	OSUT I (N=88) Mean	OSUT I (N=88) Standard Deviation	OSUT II (N=58) Mean	OSUT II (N=58) Standard Deviation	Total (N=146) Mean	Total (N=146) Standard Deviation	
General Science (GS)	50.72	8.85	51.84	6.81	51.16	8.12	
Arithmetic Reasoning (AR)	51.22	9.26	48.15	9.05	50.00	9.30	a
Word Knowledge (WK)	51.91	8.12	50.90	7.94	51.51	8.06	
Paragraph Comprehension (PC)	52.64	7.19	49.83	8.54	51.52	7.88	b
Numerical Operations (NO)	51.36	8.58	52.26	8.37	51.72	8.51	c
Coding Speed (CS)	53.89	7.27	53.69	6.35	53.81	6.92	d
Automotive/Shop Information (AS)	53.39	8.27	50.62	7.56	52.29	8.11	e, f
Mathematics Knowledge (MK)	50.47	9.76	47.28	7.40	49.20	9.03	g
Mechanical Comprehension (MC)	52.66	8.53	53.17	7.68	52.86	8.21	h
Electronics Information (EI)	51.76	9.03	50.02	7.46	51.07	8.49	

NOTE: Tests of the differences between OSUT I and OSUT II means, and between OSUT subtest means and the subtest scaled mean of 50 (standard deviation of 10) were performed using two-tailed $\underline{t}$ tests.

[a] OSUT I - OSUT II = 3.07, $\underline{t}$ = 1.971, $\underline{p} < .05$
[b] OSUT I - OSUT II = 2.81, $\underline{t}$ = 2.143, $\underline{p} < .05$
[c] OSUT - Subtest scale = 1.72, $\underline{t}$ = 2.077, $\underline{p} < .05$
[d] OSUT - Subtest scale = 3.81, $\underline{t}$ = 4.602, $\underline{p} < .01$
[e] OSUT I - OSUT II = 2.77, $\underline{t}$ = 2.048, $\underline{p} < .05$
[f] OSUT - Subtest scale = 2.29, $\underline{t}$ = 2.764, $\underline{p} < .01$
[g] OSUT I - OSUT II = 3.19, $\underline{t}$ = 2.119, $\underline{p} < .05$
[h] OSUT - Subtest scale = 2.86, $\underline{t}$ = 3.459, $\underline{p} < .01$

Table J.2

Descriptive Statistics for
ASVAB Composites (CO, GT, and AFQT)

Composite	OSUT I (N = 88) Mean	OSUT I (N = 88) Standard Deviation	OSUT II (N=58) Mean	OSUT II (N=58) Standard Deviation	Total (N = 146) Mean	Total (N = 146) Standard Deviation
CO (Army Standard)	105.40	16.00	101.88	12.89	104.00	14.84
GT (Army Standard)	102.83	17.68	97.21	16.54	100.60	17.45
AFQT (Percentile)	51.95	25.02	46.67	21.52	49.85	23.85

NOTE: A sample of 7735 soldiers in June of 1980 had a mean CO of 98.9, standard deviation of 14.4, and a mean GT of 99.0, standard deviation of 15.8. A sample of 84 Cavalry Scouts (19D) had a mean CO of 102.7, standard deviation of 13.6, and a mean GT of 101.4, standard deviation 15.2.

Table J.3

Descriptive Statistics for
Reading Ability and Biographic Variables

Variables		OSUT I (N=88) Mean	OSUT I (N=88) Standard Deviation	OSUT II (N=60) Mean	OSUT II (N=60) Standard Deviation
ABLE		37.15	5.30	37.30	9.58
Years of High School		3.58	.84	3.00	1.17
Age		20.05	2.58	20.	2.88
		Frequency	Percent	Freq cy	Percent
Dominant	Right	66	89%	[illegible]	85%
Hand	Left	8	11%	[illegible]	15%
	N	74		5	
Glasses	No	68	77%	51	88%
	Yes	20	23%	7	12%
	N	88		58	

Table J.4

Descriptive Statistics for
Job Sample Test Variables

	OSUT I (N = 88)		OSUT II (N=60)		
Variable	Mean	Standard Deviation	Mean	Standard Deviation	
TRKSPEED	.435	.154[a]	.449	.159	
TRKACCY	.630	.142[a]	.682	.121	b
TRKSPAC	.017	.007[a]	.019	.007	
ACQTIME	36.68	16.71	32.06	14.05	
ACQHITS	5.47	2.75	6.93	3.22	c
COMPTIME	51.12	22.06	58.99	20.45	d
COMPACCY	.730	.217	.680	.194	
TMPERCNT	61.01	23.23	64.36	24.20	
RSENSE	9.60	3.29	7.47	3.58	e

[a] One missing observation, N = 87.

[b] OSUT I - OSUT II = -.052, t = -2.315, $p < .05$.

[c] OSUT I - OSUT II = -1.46, t = -2.924, $p < .01$.

[d] OSUT I - OSUT II = -7.87, t = -2.195, $p < .05$.

[e] OSUT I - OSUT II = 2.13, t = 3.742, $p < .01$.

Table J.5

Descriptive Statistics for OSUT Criteria

	OSUT I			OSUT II			
Criteria	Mean	Standard Deviation	N	Mean	Standard Deviation	N	
GATE Scores	.876	.084	88	.904	.105	60	
Firing Hits	.657	.263	82	.796	.176	60	a
Instructor Rankings	25.21	9.49	88	25.54	9.26	60	

[a]OSUT I - OSUT II = -.139, t = -3.552, $p < .01$.

Table J.6

Interrater Reliabilities on Instructor Rankings

OSUT I	Number of Soldiers	Number of Instructors(R)	Average R Per Soldier	Interrater Reliability
1st Platoon	28	9	8.25	.759
2nd Platoon	31	9	7.23	.777
3rd Platoon	29	9	7.69	.824
OSUT II	**Number of Soldiers**	**Number of Instructors(R)**	**Average R Per Soldier**	**Interrater Reliability**
1st Platoon	20	10	9.25	.836
2nd Platoon	18	10	9.33	.908
3rd Platoon	22	10	8.77	.756

Appendix K

Intercorrelations Among Variables

NOTE: Correlations are printed in serial string format, with associated number of cases and two-tailed significance level. First are printed all the nonredundant coefficients from what would have been the first row in the full matrix, then all nonredundant coefficients from the second row, etc. The variable code names assigned to variables, and the order in which they appear, are:

ASVAB Subtests

GS, AR, WK, PC, NO, CS, AS, MK, MC, EI — see Table 1

ASVAB Composites

COMBAT - Combat Operations (CO)
GTECH - General Technical (GT)
AFQT - Armed Forces Qualification Test
COMBAT M1 - Combat Operations, M1 (CO-M1)

Background Data

ABLE - Reading ability
HSY - Years of high school
AGE - Age
HAND - Dominant hand
GLASSES - Whether soldier wears glasses

Job Sample Tests

TRKSPEED, TRKACCY, TRKSPAC, ACQTIME, ACQHITS, COMPTIME, COMPACCY, TMPERCNT, RSENSE — see Table 5

Criteria

GATE - GATE scores
HITS - Firing Hits
RANKINGS - Instructor rankings
GATERANK - Combined GATE-Rankings
GTHITRNK - Combined GATE-Hits-Rankings

Table K.1

Intercorrelations Among Variables for OSUT I Soldiers

		Variable Pair		Variable Pair		Variable Pair		Variable Pair		Variable Pair	
GS	0.5749	GS	0.7485	GS	0.6109	GS	0.3064	GS	0.3252	GS	0.4898
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
AR	Sig .000	WK	Sig .000	PC	Sig .000	NO	Sig .004	CS	Sig .002	AS	Sig .000
GS	0.6155	GS	0.4647	GS	0.6979	GS	0.6350	GS	0.7372	GS	0.7365
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
MK	Sig .000	MC	Sig .000	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000
GS	0.6535	GS	0.7207	GS	0.1599	GS	0.2948	GS	0.0102	GS	0.2362
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(74)	with	N(88)
COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .137	AGE	Sig .005	HAND	Sig .931	GLASSES	Sig .027
GS	0.3321	GS	0.1675	GS	0.3931	GS	-0.2183	GS	0.0313	GS	-0.5462
with	N(87)	with	N(87)	with	N(87)	with	N(88)	with	N(88)	with	N(88)
TRKSPEED	Sig .002	TRKACCY	Sig .121	TRKSPAC	Sig .000	ACQTIME	Sig .041	ACQHITS	Sig .772	COMPTIME	Sig .000
GS	0.2171	GS	0.4588	GS	0.2237	GS	0.2086	GS	0.0763	GS	0.2509
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(82)	with	N(88)
COMPACCY	Sig .042	TMPERCNT	Sig .000	RSENSE	Sig .036	GATES	Sig .050	HITS	Sig .496	RANKINGS	Sig .018
GS	0.2791	GS	0.2687	AR	0.5750	AR	0.4888	AR	0.4412	AR	0.3254
with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
GATERANK	Sig .008	GTHITRNK	Sig .015	WK	Sig .000	PC	Sig .000	NO	Sig .000	CS	Sig .002
AR	0.4988	AR	0.7818	AR	0.6156	AR	0.4751	AR	0.8494	AR	0.9096
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
AS	Sig .000	MK	Sig .000	MC	Sig .000	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000
AR	0.8517	AR	0.6203	AR	0.6443	AR	0.1196	AR	0.1994	AR	0.0332
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(74)
AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .267	AGE	Sig .062	HAND	Sig .779
AR	0.1757	AR	0.2843	AR	0.2765	AR	0.4207	AR	-0.2355	AR	0.0986
with	N(88)	with	N(87)	with	N(87)	with	N(87)	with	N(88)	with	N(88)
GLASSES	Sig .101	TRKSPEED	Sig .008	TRKACCY	Sig .010	TRKSPAC	Sig .000	ACQTIME	Sig .027	ACQHITS	Sig .361
AR	-0.4768	AR	0.3990	AR	0.4443	AR	0.1789	AR	0.2183	AR	0.1167
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(82)
COMPTIME	Sig .000	COMPACCY	Sig .000	TMPERCNT	Sig .000	RSENSE	Sig .085	GATES	Sig .041	HITS	Sig .297

Table K.1 (OSUT I – Cont'd.)

AR with RANKINGS 0.2602 N(88) Sig .014	AR with GATERANK 0.2899 N(88) Sig .006	AR with GTHITRNK 0.3132 N(82) Sig .004	WK with PC 0.7484 N(88) Sig .000	WK with NO 0.3605 N(88) Sig .001	WK with CS 0.3910 N(88) Sig .000
WK with AS 0.4126 N(88) Sig .000	WK with MK 0.5742 N(88) Sig .000	WK with MC 0.4028 N(88) Sig .000	WK with EI 0.6173 N(88) Sig .000	WK with COMBAT 0.6073 N(88) Sig .000	WK with GTECH 0.8486 N(88) Sig .000
WK with AFQT 0.8313 N(88) Sig .000	WK with COMBATMI 0.6355 N(88) Sig .000	WK with ABLE 0.7922 N(88) Sig .000	WK with HSY 0.1898 N(88) Sig .062	WK with AGE 0.2881 N(88) Sig .006	WK with HAND -0.0603 N(74) Sig .610
WK with GLASSES [illegible] N(88) Sig .017	WK with TRKSPEED 0.3034 N(87) Sig .004	WK with TRKACCY 0.1890 N(87) Sig .080	WK with TRKSPAC 0.3535 N(87) Sig .001	WK with ACQTIME -0.1431 N(88) Sig .183	WK with ACQHITS 0.0643 N(88) Sig .552
WK with COMPTIME -0.6422 N(88) Sig .000	WK with COMPACCY 0.2844 N(88) Sig .007	WK with TMPERCNT 0.4171 N(88) Sig .000	WK with RSENSE 0.1018 N(88) Sig .346	WK with GATES 0.1522 N(88) Sig .157	WK with HITS 0.1195 N(82) Sig .285
WK with RANKINGS 0.2167 N(88) Sig .043	WK with GATERANK 0.2236 N(88) Sig .036	WK with GTHITRNK 0.2327 N(82) Sig .035	PC with NO 0.4398 N(88) Sig .000	PC with CS 0.4051 N(88) Sig .000	PC with AS 0.4298 N(88) Sig .000
PC with MK 0.4398 N(88) Sig .000	PC with MC 0.4334 N(88) Sig .000	PC with EI 0.5587 N(88) Sig .000	PC with COMBAT 0.5954 N(88) Sig .000	PC with GTECH 0.7465 N(88) Sig .000	PC with AFQT 0.7463 N(88) Sig .000
PC with COMBATMI 0.6523 N(88) Sig .000	PC with ABLE 0.6569 N(88) Sig .000	PC with HSY 0.1760 N(88) Sig .101	PC with AGE 0.2471 N(88) Sig .020	PC with HAND -0.1581 N(74) Sig .184	PC with GLASSES 0.2741 N(88) Sig .010
PC with TRKSPEED 0.2781 N(87) Sig .009	PC with TRKACCY 0.1738 N(87) Sig .107	PC with TRKSPAC 0.3425 N(87) Sig .001	PC with ACQTIME -0.2569 N(88) Sig .016	PC with ACQHITS 0.1117 N(88) Sig .300	PC with COMPTIME -0.5718 N(88) Sig .000
PC with COMPACCY 0.2768 N(88) Sig .008	PC with TMPERCNT 0.3132 N(88) Sig .003	PC with RSENSE -0.0135 N(88) Sig .901	PC with GATES 0.2625 N(88) Sig .013	PC with HITS 0.0778 N(82) Sig .486	PC with RANKINGS 0.3418 N(88) Sig .001
PC with GATERANK 0.3663 N(88) Sig .000	PC with GTHITRNK 0.3204 N(82) Sig .003	NO with CS 0.6217 N(88) Sig .000	NO with AS 0.2587 N(88) Sig .015	NO with MK 0.4985 N(88) Sig .000	NO with MC 0.1486 N(88) Sig .164

Table K.1 (OSUT I - Cont'd.)

NO	0.1984	NO	0.4861	NO	0.4751	NO	0.6700	NO	0.7251	NO	0.4525
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
EI	Sig .064	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000
NO	0.0709	NO	0.2285	NO	-0.2023	NO	0.1453	NO	0.3666	NO	0.0414
with	N(88)	with	N(88)	with	N(74)	with	N(88)	with	N(87)	with	N(87)
HSY	Sig .512	AGE	Sig .032	HAND	Sig .084	GLASSES	Sig .177	TRKSPEED	Sig .000	TRKACCY	Sig .703
NO	0.3155	NO	-0.2525	NO	-0.0043	NO	-0.4436	NO	0.1914	NO	0.4006
with	N(87)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
TRKSPAC	Sig .003	ACQTIME	Sig .018	ACQHITS	Sig .968	COMPTIME	Sig .000	COMPACCY	Sig .074	TMPERCNT	Sig .000
NO	0.0827	NO	0.1807	NO	0.2785	NO	0.2699	NO	0.2730	NO	0.3853
with	N(88)	with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(82)
RSENSE	Sig .444	GATES	Sig .092	HITS	Sig .011	RANKINGS	Sig .011	GATERANK	Sig .010	GTHITRNK	Sig .000
CS	0.1097	CS	0.4033	CS	0.0570	CS	0.2325	CS	0.4721	CS	0.4138
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
AS	Sig .309	MK	Sig .000	MC	Sig .598	EI	Sig .029	COMBAT	Sig .000	GTECH	Sig .000
CS	0.5271	CS	0.6646	CS	0.4669	CS	0.0674	CS	0.1679	CS	-0.1622
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(74)
AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .533	AGE	Sig .118	HAND	Sig .167
CS	0.2488	CS	0.3331	CS	0.0663	CS	0.3279	CS	-0.3376	CS	0.0867
with	N(88)	with	N(87)	with	N(87)	with	N(87)	with	N(88)	with	N(88)
GLASSES	Sig .019	TRKSPEED	Sig .002	TRKACCY	Sig .542	TRKSPAC	Sig .002	ACQTIME	Sig .001	ACQHITS	Sig .422
CS	-0.4394	CS	0.0051	CS	0.3333	CS	0.1223	CS	0.2369	CS	0.1217
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(82)
COMPTIME	Sig .000	COMPACCY	Sig .962	TMPERCNT	Sig .002	RSENSE	Sig .256	GATES	Sig .026	HITS	Sig .278
CS	0.2970	CS	0.3236	CS	0.3235	AS	0.3990	AS	0.6653	AS	0.5779
with	N(88)	with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(88)
RANKINGS	Sig .005	GATERANK	Sig .002	GTHITRNK	Sig .003	MK	Sig .000	MC	Sig .000	EI	Sig .000
AS	0.7831	AS	0.5339	AS	0.5195	AS	0.7030	AS	0.3499	AS	0.1675
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .001	HSY	Sig .119
AS	0.2596	AS	0.0335	AS	0.1295	AS	0.2192	AS	0.2654	AS	0.3664
with	N(88)	with	N(74)	with	N(88)	with	N(87)	with	N(87)	with	N(87)
AGE	Sig .015	HAND	Sig .777	GLASSES	Sig .229	TRKSPEED	Sig .041	TRKACCY	Sig .013	TRKSPAC	Sig .000

Table K.1 (OSUT I - Cont'd.)

AS	-0.1567	AS	-0.0075	AS	-0.3442	AS	0.2384	AS	0.3406	AS	0.1165
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
ACQTIME	Sig .145	ACQHITS	Sig .945	COMPTIME	Sig .001	COMPACCY	Sig .025	TMPERCNT	Sig .001	RSENSE	Sig .280
AS	0.3880	AS	-0.0660	AS	0.3185	AS	0.4281	AS	0.3268	MK	0.4919
with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(82)	with	N(88)
GATES	Sig .000	HITS	Sig .556	RANKINGS	Sig .002	GATERANK	Sig .000	GTHITRNK	Sig .003	MC	Sig .000
MK	0.4139	MK	0.7145	MK	0.7670	MK	0.7850	MK	0.6066	MK	0.6501
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000
MK	0.2106	MK	0.2295	MK	-0.0266	MK	0.3596	MK	0.3322	MK	0.2373
with	N(88)	with	N(88)	with	N(74)	with	N(88)	with	N(87)	with	N(87)
HSY	Sig .049	AGE	Sig .031	HAND	Sig .822	GLASSES	Sig .001	TRKSPEED	Sig .002	TRKACCY	Sig .027
MK	0.4357	MK	-0.2316	MK	0.0462	MK	-0.5036	MK	0.3090	MK	0.4671
with	N(87)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
TRKSPAC	Sig .000	ACQTIME	Sig .030	ACQHITS	Sig .669	COMPTIME	Sig .000	COMPACCY	Sig .003	TMPERCNT	Sig .000
MK	0.2288	MK	0.2338	MK	0.1065	MK	0.3723	MK	0.3673	MK	0.3559
with	N(88)	with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(82)
RSENSE	Sig .032	GATES	Sig .028	HITS	Sig .341	RANKINGS	Sig .000	GATERANK	Sig .000	GTHITRNK	Sig .001
MC	0.5408	MC	0.8149	MC	0.6057	MC	0.5187	MC	0.5147	MC	0.3758
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000
MC	0.1561	MC	0.0807	MC	-0.0461	MC	0.0634	MC	0.1973	MC	0.2844
with	N(88)	with	N(88)	with	N(74)	with	N(88)	with	N(87)	with	N(87)
HSY	Sig .146	AGE	Sig .455	HAND	Sig .697	GLASSES	Sig .558	TRKSPEED	Sig .067	TRKACCY	Sig .008
MC	0.3697	MC	-0.2346	MC	0.1466	MC	-0.2743	MC	0.2003	MC	0.2195
with	N(87)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
TRKSPAC	Sig .000	ACQTIME	Sig .028	ACQHITS	Sig .173	COMPTIME	Sig .010	COMPACCY	Sig .061	TMPERCNT	Sig .040
MC	0.2834	MC	0.3760	MC	0.0309	MC	0.2879	MC	0.4023	MC	0.3593
with	N(88)	with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(82)
RSENSE	Sig .007	GATES	Sig .000	HITS	Sig .783	RANKINGS	Sig .007	GATERANK	Sig .000	GTHITRNK	Sig .001
EI	0.6262	EI	0.6187	EI	0.5832	EI	0.7326	EI	0.5868	EI	0.1380
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .200

Table K.1 (OSUT I - Cont'd.)

EI	0.1945	EI	-0.1026	EI	0.2499	EI	0.2854	EI	0.2988	EI	0.4057
with	N(88)	with	N(74)	with	N(88)	with	N(87)	with	N(87)	with	N(87)
AGE	Sig .069	HAND	Sig .384	GLASSES	Sig .019	TRKSPEED	Sig .005	TRKACCY	Sig .005	TRKSPAC	Sig .000
EI	-0.3000	EI	0.1864	EI	-0.3738	EI	0.1641	EI	0.3832	EI	0.1578
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
ACQTIME	Sig .005	ACQHITS	Sig .082	COMPTIME	Sig .000	COMPACCY	Sig .127	TMPERCNT	Sig .000	RSENSE	Sig .142
EI	0.2868	EI	-0.0227	EI	0.1984	EI	0.3001	EI	0.2438	COMBAT	0.8488
with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(82)	with	N(88)
GATES	Sig .005	HITS	Sig .839	RANKINGS	Sig .064	GATERANK	Sig .004	GTHITRNK	Sig .027	GTECH	Sig .000
COMBAT	0.8266	COMBAT	0.8404	COMBAT	0.6253	COMBAT	0.1745	COMBAT	0.2387	COMBAT	-0.0421
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(74)
AFQT	Sig .000	COMBATMI	Sig .000	ABLE	Sig .000	HSY	Sig .104	AGE	Sig .025	HAND	Sig .722
COMBAT	0.2041	COMBAT	0.3467	COMBAT	0.3095	COMBAT	0.5045	COMBAT	-0.3207	COMBAT	0.1105
with	N(88)	with	N(87)	with	N(87)	with	N(87)	with	N(88)	with	N(88)
GLASSES	Sig .056	TRKSPEED	Sig .001	TRKACCY	Sig .004	TRKSPAC	Sig .000	ACQTIME	Sig .002	ACQHITS	Sig .305
COMBAT	-0.5175	COMBAT	0.2998	COMBAT	0.4540	COMBAT	0.2397	COMBAT	0.4109	COMBAT	0.0664
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(82)
COMPTIME	Sig .000	COMPACCY	Sig .005	TMPERCNT	Sig .000	RSENSE	Sig .024	GATES	Sig .000	HITS	Sig .553
COMBAT	0.3906	COMBAT	0.4857	COMBAT	0.4396	GTECH	0.8555	GTECH	0.7276	GTECH	0.8009
with	N(88)	with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(88)
RANKINGS	Sig .000	GATERANK	Sig .000	GTHITRNK	Sig .000	AFQT	Sig .000	COMBATMI	Sig .000	ABLE	Sig .000
GTECH	0.1816	GTECH	0.2665	GTECH	-0.0287	GTECH	0.2432	GTECH	0.3320	GTECH	0.2721
with	N(88)	with	N(88)	with	N(74)	with	N(88)	with	N(87)	with	N(87)
HSY	Sig .090	AGE	Sig .012	HAND	Sig .808	GLASSES	Sig .022	TRKSPEED	Sig .002	TRKACCY	Sig .011
GTECH	0.4486	GTECH	-0.2409	GTECH	0.0998	GTECH	-0.6292	GTECH	0.3985	GTECH	0.4781
with	N(87)	with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(88)
TRKSPAC	Sig .000	ACQTIME	Sig .024	ACQHITS	Sig .355	COMPTIME	Sig .000	COMPACCY	Sig .000	TMPERCNT	Sig .000
GTECH	0.1487	GTECH	0.2367	GTECH	0.1292	GTECH	0.2962	GTECH	0.3230	GTECH	0.3320
with	N(88)	with	N(88)	with	N(82)	with	N(88)	with	N(88)	with	N(82)
RSENSE	Sig .167	GATES	Sig .026	HITS	Sig .247	RANKINGS	Sig .005	GATERANK	Sig .002	GTHITRNK	Sig .002
AFQT	0.8152	AFQT	0.7929	AFQT	0.1888	AFQT	0.3270	AFQT	-0.0681	AFQT	0.2594
with	N(88)	with	N(88)	with	N(88)	with	N(88)	with	N(74)	with	N(88)
COMBATMI	Sig .000	ABLE	Sig .000	HSY	Sig .078	AGE	Sig .002	HAND	Sig .564	GLASSES	Sig .015

Table K.1 (OSUT I - Cont'd.)

AFQT 0.3729 with N(87) TRKSPEED Sig .000	AFQT 0.2366 with N(87) TRKACCY Sig .027	AFQT 0.4499 with N(87) TRKSPAC Sig .000	AFQT -0.2510 with N(88) ACQTIME Sig .018	AFQT 0.0736 with N(88) ACQHITS Sig .496	AFQT -0.6211 with N(88) COMPTIME Sig .000
AFQT 0.3557 with N(88) COMPACCY Sig .001	AFQT 0.5175 with N(88) TMPERCNT Sig .000	AFQT 0.1663 with N(88) RSENSE Sig .121	AFQT 0.2303 with N(88) GATES Sig .031	AFQT 0.1808 with N(82) HITS Sig .104	AFQT 0.3373 with N(88) RANKINGS Sig .001
AFQT 0.3440 with N(88) GATERANK Sig .001	AFQT 0.3756 with N(82) GTHITRNK Sig .001	COMBATM1 0.6588 with N(88) ABLE Sig .000	COMBATM1 0.1588 with N(88) HSY Sig .139	COMBATM1 0.3017 with N(88) AGE Sig .004	COMBATM1 -0.1518 with N(74) HAND Sig .197
COMBATM1 0.2718 with N(88) GLASSES Sig .010	COMBATM1 0.4252 with N(87) TRKSPEED Sig .000	COMBATM1 0.2398 with N(87) TRKACCY Sig .025	COMBATM1 0.4970 with N(87) TRKSPAC Sig .000	COMBATM1 -0.3673 with N(88) ACQTIME Sig .000	COMBATM1 0.0943 with N(88) ACQHITS Sig .382
COMBATM1 -0.5631 with N(88) COMPTIME Sig .000	COMBATM1 0.2186 with N(88) COMPACCY Sig .041	COMBATM1 0.5169 with N(88) TMPERCNT Sig .000	COMBATM1 0.1698 with N(88) RSENSE Sig .114	COMBATM1 0.3902 with N(88) GATES Sig .000	COMBATM1 0.1045 with N(82) HITS Sig .350
COMBATM1 0.3790 with N(88) RANKINGS Sig .000	COMBATM1 0.4661 with N(88) GATERANK Sig .000	COMBATM1 0.4444 with N(82) GTHITRNK Sig .000	ABLE 0.1251 with N(88) HSY Sig .245	ABLE 0.2580 with N(88) AGE Sig .015	ABLE -0.0753 with N(74) HAND Sig .524
ABLE 0.2371 with N(88) GLASSES Sig .026	ABLE 0.3695 with N(87) TRKSPEED Sig .000	ABLE 0.2429 with N(87) TRKACCY Sig .023	ABLE 0.4554 with N(87) TRKSPAC Sig .000	ABLE -0.2153 with N(88) ACQTIME Sig .044	ABLE 0.1107 with N(88) ACQHITS Sig .305
ABLE -0.6843 with N(88) COMPTIME Sig .000	ABLE 0.2946 with N(88) COMPACCY Sig .005	ABLE 0.4985 with N(88) TMPERCNT Sig .000	ABLE 0.1672 with N(88) RSENSE Sig .119	ABLE 0.2246 with N(88) GATES Sig .035	ABLE 0.1240 with N(82) HITS Sig .267
ABLE 0.2102 with N(88) RANKINGS Sig .049	ABLE 0.2635 with N(88) GATERANK Sig .013	ABLE 0.2832 with N(82) GTHITRNK Sig .010	HSY 0.3810 with N(88) AGE Sig .000	HSY -0.0108 with N(74) HAND Sig .927	HSY 0.1755 with N(88) GLASSES Sig .102
HSY -0.1053 with N(87) TRKSPEED Sig .332	HSY 0.1690 with N(87) TRKACCY Sig .118	HSY 0.0244 with N(87) TRKSPAC Sig .822	HSY 0.0511 with N(88) ACQTIME Sig .636	HSY 0.0055 with N(88) ACQHITS Sig .959	HSY -0.0154 with N(88) COMPTIME Sig .887
HSY 0.0459 with N(88) COMPACCY Sig .671	HSY 0.0157 with N(88) TMPERCNT Sig .884	HSY 0.1344 with N(88) RSENSE Sig .212	HSY 0.2109 with N(88) GATES Sig .049	HSY 0.0663 with N(82) HITS Sig .554	HSY 0.2140 with N(88) RANKINGS Sig .045

Table K.1 (OSUT I - Cont'd.)

HSY 0.2575 with N(88) GATERANK Sig .015	HSY 0.2173 with N(82) GTHITRNK Sig .050	AGE -0.0788 with N(74) HAND Sig .505	AGE 0.0750 with N(88) GLASSES Sig .487	AGE -0.1176 with N(87) TRKSPEED Sig .278	AGE 0.0800 with N(87) TRKACCY Sig .461
AGE -0.0689 with N(87) TRKSPAC Sig .526	AGE -0.1171 with N(88) ACQTIME Sig .277	AGE 0.1254 with N(88) ACQHITS Sig .244	AGE -0.1609 with N(88) COMPTIME Sig .134	AGE 0.0334 with N(88) COMPACCY Sig .757	AGE 0.3048 with N(88) TMPERCNT Sig .004
AGE 0.0958 with N(88) RSENSE Sig .374	AGE 0.0573 with N(88) GATES Sig .596	AGE 0.1763 with N(82) HITS Sig .113	AGE 0.3131 with N(88) RANKINGS Sig .003	AGE 0.2245 with N(88) GATERANK Sig .035	AGE 0.2811 with N(82) GTHITRNK Sig .008
HAND 0.0055 with N(74) GLASSES Sig .863	HAND -0.0790 with N(73) TRKSPEED Sig .506	HAND -0.2607 with N(73) TRKACCY Sig .026	HAND -0.2442 with N(73) TRKSPAC Sig .037	HAND 0.4048 with N(74) ACQTIME Sig .000	HAND -0.1778 with N(74) ACQHITS Sig .129
HAND 0.2777 with N(74) COMPTIME Sig .017	HAND 0.0449 with N(74) COMPACCY Sig .704	HAND -0.1464 with N(74) TMPERCNT Sig .213	HAND 0.0249 with N(74) RSENSE Sig .833	HAND -0.1583 with N(74) GATES Sig .178	HAND -0.0490 with N(68) HITS Sig .691
HAND -0.1767 with N(74) RANKINGS Sig .132	HAND -0.2037 with N(74) GATERANK Sig .082	HAND -0.2191 with N(68) GTHITRNK Sig .073	GLASSES 0.1970 with N(87) TRKSPEED Sig .067	GLASSES 0.0788 with N(87) TRKACCY Sig .463	GLASSES 0.1925 with N(87) TRKSPAC Sig .074
GLASSES -0.1908 with N(88) ACQTIME Sig .075	GLASSES 0.1583 with N(88) ACQHITS Sig .141	GLASSES -0.1890 with N(88) COMPTIME Sig .078	GLASSES 0.1078 with N(88) COMPACCY Sig .318	GLASSES 0.2561 with N(88) TMPERCNT Sig .016	GLASSES -0.0668 with N(88) RSENSE Sig .536
GLASSES 0.0047 with N(88) GATES Sig .966	GLASSES -0.0299 with N(82) HITS Sig .790	GLASSES 0.1198 with N(88) RANKINGS Sig .266	GLASSES 0.0755 with N(88) GATERANK Sig .485	GLASSES 0.0292 with N(82) GTHITRNK Sig .795	TRKSPEED -0.1300 with N(87) TRKACCY Sig .230
TRKSPEED 0.7691 with N(87) TRKSPAC Sig .000	TRKSPEED -0.3280 with N(87) ACQTIME Sig .002	TRKSPEED -0.0117 with N(87) ACQHITS Sig .914	TRKSPEED -0.2952 with N(87) COMPTIME Sig .006	TRKSPEED 0.1454 with N(87) COMPACCY Sig .179	TRKSPEED 0.2501 with N(87) TMPERCNT Sig .019
TRKSPEED 0.1973 with N(87) RSENSE Sig .067	TRKSPEED 0.1808 with N(87) GATES Sig .094	TRKSPEED 0.0479 with N(81) HITS Sig .671	TRKSPEED 0.0628 with N(87) RANKINGS Sig .563	TRKSPEED 0.1470 with N(87) GATERANK Sig .174	TRKSPEED 0.1828 with N(81) GTHITRNK Sig .102
TRKACCY 0.4834 with N(87) TRKSPAC Sig .000	TRKACCY -0.1914 with N(87) ACQTIME Sig .076	TRKACCY 0.1142 with N(87) ACQHITS Sig .292	TRKACCY -0.1775 with N(87) COMPTIME Sig .100	TRKACCY -0.0011 with N(87) COMPACCY Sig .992	TRKACCY 0.1355 with N(87) TMPERCNT Sig .211

Table K.1 (OSUT I - Cont'd.)

TRKACCY 0.1331	TRKACCY 0.3125	TRKACCY 0.065	TRKACCY 0.2256	TRKACCY 0.3262	TRKACCY 0.2908
with N(87)	with N(87)	with N(81)	with N(87)	with N(87)	with N(81)
RSENSE Sig .219	GATES Sig .003	HITS Sig .558	RANKINGS Sig .036	GATERANK Sig .002	GTHITRNK Sig .008
TRKSPAC -0.3831	TRKSPAC 0.0827	TRKSPAC -0.3646	TRKSPAC 0.1036	TRKSPAC 0.2606	TRKSPAC 0.2765
with N(87)	with N(87)	with N(87)	with N(87)	with N(87)	with N(87)
ACQTIME Sig .000	ACQHITS Sig .446	COMPTIME Sig .001	COMPACCY Sig .340	TMPERCNT Sig .015	RSENSE Sig .010
TRKSPAC 0.3388	TRKSPAC 0.0815	TRKSPAC 0.1795	TRKSPAC 0.3136	TRKSPAC 0.3171	ACQTIME -0.2659
with N(87)	with N(81)	with N(87)	with N(87)	with N(81)	with N(88)
GATES Sig .001	HITS Sig .469	RANKINGS Sig .096	GATERANK Sig .003	GTHITRNK Sig .004	ACQHITS Sig .012
ACQTIME 0.3389	ACQTIME 0.0238	ACQTIME -0.1346	ACQTIME -0.1212	ACQTIME -0.1669	ACQTIME -0.0735
with N(88)	with N(88)	with N(88)	with N(88)	with N(88)	with N(82)
COMPTIME Sig .001	COMPACCY Sig .826	TMPERCNT Sig .211	RSENSE Sig .261	GATES Sig .120	HITS Sig .512
ACQTIME -0.3019	ACQTIME -0.2841	ACQTIME -0.3027	ACQHITS -0.0200	ACQHITS -0.0094	ACQHITS 0.0745
with N(88)	with N(88)	with N(82)	with N(88)	with N(88)	with N(88)
RANKINGS Sig .004	GATERANK Sig .007	GTHITRNK Sig .006	COMPTIME Sig .853	COMPACCY Sig .931	TMPERCNT Sig .490
ACQHITS 0.1885	ACQHITS -0.0317	ACQHITS 0.1038	ACQHITS 0.1237	ACQHITS 0.0557	ACQHITS 0.0573
with N(88)	with N(88)	with N(82)	with N(88)	with N(88)	with N(82)
RSENSE Sig .079	GATES Sig .769	HITS Sig .354	RANKINGS Sig .251	GATERANK Sig .606	GTHITRNK Sig .609
COMPTIME -0.4681	COMPTIME -0.4253	COMPTIME -0.0840	COMPTIME -0.2187	COMPTIME -0.1653	COMPTIME -0.2303
with N(88)	with N(88)	with N(88)	with N(88)	with N(82)	with N(88)
COMPACCY Sig .000	TMPERCNT Sig .000	RSENSE Sig .437	GATES Sig .041	HITS Sig .138	RANKINGS Sig .031
COMPTIME -0.2721	COMPTIME -0.3139	COMPACCY 0.2625	COMPACCY 0.0289	COMPACCY 0.0071	COMPACCY -0.0652
with N(88)	with N(82)	with N(88)	with N(88)	with N(88)	with N(82)
GATERANK Sig .010	GTHITRNK Sig .004	TMPERCNT Sig .013	RSENSE Sig .789	GATES Sig .948	HITS Sig .561
COMPACCY -0.1315	COMPACCY -0.0755	COMPACCY -0.0937	TMPERCNT 0.1050	TMPERCNT 0.2004	TMPERCNT 0.2039
with N(88)	with N(88)	with N(82)	with N(88)	with N(88)	with N(82)
RANKINGS Sig .222	GATERANK Sig .485	GTHITRNK Sig .402	RSENSE Sig .330	GATES Sig .061	HITS Sig .066
TMPERCNT 0.0574	TMPERCNT 0.1562	TMPERCNT 0.2536	RSENSE 0.2204	RSENSE 0.1147	RSENSE 0.1208
with N(88)	with N(88)	with N(82)	with N(88)	with N(82)	with N(88)
RANKINGS Sig .595	GATERANK Sig .146	GTHITRNK Sig .022	GATES Sig .039	HITS Sig .305	RANKINGS Sig .262
RSENSE 0.2068	RSENSE 0.2244	GATES 0.0201	GATES 0.3615	GATES 0.8250	GATES 0.6982
with N(88)	with N(82)	with N(82)	with N(88)	with N(88)	with N(82)
GATERANK Sig .053	GTHITRNK Sig .043	HITS Sig .858	RANKINGS Sig .001	GATERANK Sig .000	GTHITRNK Sig .000
HITS 0.0575	HITS 0.0467	HITS 0.5483	RANKINGS 0.8252	RANKINGS 0.7174	GATERANK 0.8609
with N(82)	with N(82)	with N(82)	with N(88)	with N(82)	with N(82)
RANKINGS Sig .608	GATERANK Sig .677	GTHITRNK Sig .000	GATERANK Sig .000	GTHITRNK Sig .000	GTHITRNK Sig .000

Table K.2

Intercorrelations Among Variables for OSUT II Soldiers

Variable Pair		Variable Pair		Variable Pair		Variable Pair		Variable Pair		Variable Pair	
GS	0.3980	GS	0.6262	GS	0.4978	GS	-0.0885	GS	0.1765	GS	0.4402
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
AR	Sig .002	WK	Sig .000	PC	Sig .000	NO	Sig .509	CS	Sig .185	AS	Sig .001
GS	0.3902	GS	0.4325	GS	0.6363	GS	0.5559	GS	0.5879	GS	0.5263
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
MK	Sig .002	MC	Sig .001	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000
GS	0.4137	GS	0.5911	GS	0.3017	GS	0.5296	GS	0.0767	GS	0.0634
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(57)	with	N(58)
COMBATMI	Sig .001	ABLE	Sig .000	HSY	Sig .021	AGE	Sig .000	HAND	Sig .570	GLASSES	Sig .636
GS	0.2323	GS	0.1480	GS	0.3034	GS	-0.2256	GS	0.1536	GS	-0.3131
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
TRKSPEED	Sig .079	TRKACCY	Sig .268	TRKSPAC	Sig .021	ACQTIME	Sig .089	ACQHITS	Sig .250	COMPTIME	Sig .017
GS	0.1647	GS	0.3547	GS	-0.0830	GS	0.2961	GS	-0.0390	GS	0.1995
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
COMPACCY	Sig .217	TMPERCNT	Sig .006	RSENSE	Sig .535	GATES	Sig .024	HITS	Sig .771	RANKINGS	Sig .133
GS	0.2992	GS	0.2542	AR	0.3209	AR	0.4176	AR	0.2946	AR	0.1137
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
GATERANK	Sig .023	GTHITRNK	Sig .054	WK	Sig .014	PC	Sig .001	NO	Sig .025	CS	Sig .395
AR	0.3583	AR	0.5336	AR	0.3423	AR	0.3926	AR	0.7369	AR	0.8595
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
AS	Sig .006	MK	Sig .000	MC	Sig .009	EI	Sig .002	COMBAT	Sig .000	GTECH	Sig .000
AR	0.7985	AR	0.4318	AR	0.6530	AR	0.2154	AR	0.1930	AR	0.0105
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(57)
AFQT	Sig .000	COMBATMI	Sig .001	ABLE	Sig .000	HSY	Sig .104	AGE	Sig .147	HAND	Sig .838
AR	0.0349	AR	-0.0230	AR	0.0463	AR	0.0312	AR	-0.1946	AR	-0.0829
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
GLASSES	Sig .795	TRKSPEED	Sig .864	TRKACCY	Sig .730	TRKSPAC	Sig .816	ACQTIME	Sig .143	ACQHITS	Sig .536
AR	-0.3496	AR	0.1878	AR	0.5479	AR	-0.0995	AR	0.1651	AR	0.1230
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
COMPTIME	Sig .007	COMPACCY	Sig .158	TMPERCNT	Sig .000	RSENSE	Sig .457	GATES	Sig .216	HITS	Sig .358

Table K.2 (OSUT II - Cont'd.)

AR with RANKINGS 0.0678 N(58) Sig .613	AR with GATERANK 0.1404 N(58) Sig .293	AR with GTHITRNK 0.1984 N(58) Sig .135	WK with PC 0.6838 N(58) Sig .000	WK with NO -0.0218 N(58) Sig .871	WK with CS 0.0770 N(58) Sig .566
WK with AS 0.5237 N(58) Sig .000	WK with MK 0.2742 N(58) Sig .037	WK with MC 0.5685 N(58) Sig .000	WK with EI 0.7147 N(58) Sig .000	WK with COMBAT 0.5596 N(58) Sig .000	WK with GTECH 0.7370 N(58) Sig .000
WK with AFQT 0.6281 N(58) Sig .000	WK with COMBATM1 0.4696 N(58) Sig .000	WK with ABLE 0.6098 N(58) Sig .000	WK with HSY 0.0510 N(58) Sig .704	WK with AGE 0.4076 N(58) Sig .001	WK with HAND 0.0728 N(57) Sig .591
WK with GLASSES 0.1865 N(58) Sig .161	WK with TRKSPEED 0.2690 N(58) Sig .041	WK with TRKACCY 0.1673 N(58) Sig .209	WK with TRKSPAC 0.3796 N(58) Sig .003	WK with ACQTIME -0.2507 N(58) Sig .058	WK with ACQHITS 0.2104 N(58) Sig .113
WK with COMPTIME -0.5299 N(58) Sig .000	WK with COMPACCY 0.2443 N(58) Sig .065	WK with TMPERCNT 0.4757 N(58) Sig .000	WK with RSENSE -0.0432 N(58) Sig .748	WK with GATES 0.2244 N(58) Sig .090	WK with HITS 0.0458 N(58) Sig .733
WK with RANKINGS 0.1891 N(58) Sig .155	WK with GATERANK 0.2498 N(58) Sig .059	WK with GTHITRNK 0.2561 N(58) Sig .052	PC with NO -0.0303 N(58) Sig .821	PC with CS 0.0394 N(58) Sig .769	PC with AS 0.3002 N(58) Sig .022
PC with MK 0.3540 N(58) Sig .006	PC with MC 0.4293 N(58) Sig .001	PC with EI 0.4683 N(58) Sig .000	PC with COMBAT 0.4626 N(58) Sig .000	PC with GTECH 0.7370 N(58) Sig .000	PC with AFQT 0.6368 N(58) Sig .000
PC with COMBATM1 0.2818 N(58) Sig .032	PC with ABLE 0.5926 N(58) Sig .000	PC with HSY 0.0193 N(58) Sig .886	PC with AGE 0.3674 N(58) Sig .005	PC with HAND -0.0275 N(57) Sig .839	PC with GLASSES -0.1300 N(58) Sig .331
PC with TRKSPEED 0.1290 N(58) Sig .334	PC with TRKACCY 0.3205 N(58) Sig .014	PC with TRKSPAC 0.3125 N(58) Sig .017	PC with ACQTIME -0.0417 N(58) Sig .756	PC with ACQHITS 0.0570 N(58) Sig .671	PC with COMPTIME -0.3031 N(58) Sig .021
PC with COMPACCY 0.2715 N(58) Sig .039	PC with TMPERCNT 0.4529 N(58) Sig .000	PC with RSENSE -0.1509 N(58) Sig .258	PC with GATES 0.1756 N(58) Sig .187	PC with HITS 0.0855 N(58) Sig .523	PC with RANKINGS 0.0615 N(58) Sig .647
PC with GATERANK 0.1429 N(58) Sig .284	PC with GTHITRNK 0.1797 N(58) Sig .177	NO with CS 0.4078 N(58) Sig .001	NO with AS 0.2328 N(58) Sig .079	NO with MK 0.2242 N(58) Sig .091	NO with MC -0.0190 N(58) Sig .888

Table K.2 (OSUT II - Cont'd.)

NO with EI	0.1437 N(58) Sig .282	NO with COMBAT	0.3342 N(58) Sig .010	NO with GTECH	0.1884 N(58) Sig .157	NO with AFQT	0.4375 N(58) Sig .001	NO with COMBATMI	0.6750 N(58) Sig .000	NO with ABLE	0.1483 N(58) Sig .267
NO with HSY	0.1540 N(58) Sig .248	NO with AGE	0.1576 N(58) Sig .237	NO with HAND	-0.1508 N(57) Sig .263	NO with GLASSES	0.1733 N(58) Sig .193	NO with TRKSPEED	-0.0446 N(58) Sig .740	NO with TRKACCY	-0.1318 N(58) Sig .324
NO with TRKSPAC	-0.1056 N(58) Sig .430	NO with ACQTIME	-0.0809 N(58) Sig .546	NO with ACQHITS	-0.2313 N(58) Sig .081	NO with COMPTIME	0.0301 N(58) Sig .823	NO with COMPACCY	-0.0891 N(58) Sig .506	NO with TMPERCNT	0.1111 N(58) Sig .407
NO with RSENSE	0.0589 N(58) Sig .660	NO with GATES	0.2145 N(58) Sig .106	NO with HITS	-0.0553 N(58) Sig .680	NO with RANKINGS	0.4417 N(58) Sig .001	NO with GATERANK	0.3974 N(58) Sig .002	NO with GTHITRNK	0.3356 N(58) Sig .010
CS with AS	0.1180 N(58) Sig .378	CS with MK	0.3311 N(58) Sig .011	CS with MC	0.0806 N(58) Sig .548	CS with EI	0.1612 N(58) Sig .227	CS with COMBAT	0.4315 N(58) Sig .001	CS with GTECH	0.1155 N(58) Sig .388
CS with AFQT	0.2868 N(58) Sig .029	CS with COMBATMI	0.5803 N(58) Sig .000	CS with ABLE	0.0941 N(56) Sig .482	CS with HSY	0.1062 N(58) Sig .427	CS with AGE	0.2601 N(58) Sig .049	CS with HAND	-0.1488 N(57) Sig .269
CS with GLASSES	0.2704 N(58) Sig .040	CS with TRKSPEED	0.0338 N(58) Sig .801	CS with TRKACCY	-0.0880 N(58) Sig .511	CS with TRKSPAC	0.0011 N(58) Sig .994	CS with ACQTIME	-0.0780 N(58) Sig .561	CS with ACQHITS	-0.1113 N(58) Sig .406
CS with COMPTIME	-0.1359 N(58) Sig .309	CS with COMPACCY	0.0661 N(58) Sig .622	CS with TMPERCNT	0.1600 N(58) Sig .230	CS with RSENSE	-0.0483 N(58) Sig .719	CS with GATES	0.0634 N(58) Sig .636	CS with HITS	0.0723 N(58) Sig .590
CS with RANKINGS	0.3471 N(58) Sig .008	CS with GATERANK	0.2491 N(58) Sig .059	CS with GTHITRNK	0.2703 N(58) Sig .040	AS with MK	0.2414 N(58) Sig .068	AS with MC	0.4867 N(58) Sig .000	AS with EI	0.6826 N(58) Sig .000
AS with COMBAT	0.7448 N(58) Sig .000	AS with GTECH	0.4866 N(58) Sig .000	AS with AFQT	0.4834 N(58) Sig .000	AS with COMBATMI	0.7512 N(58) Sig .000	AS with ABLE	0.4580 N(58) Sig .000	AS with HSY	0.1804 N(58) Sig .175
AS with AGE	0.3618 N(58) Sig .005	AS with HAND	0.0043 N(57) Sig .975	AS with GLASSES	0.1599 N(58) Sig .231	AS with TRKSPEED	0.2042 N(58) Sig .124	AS with TRKACCY	-0.0351 N(58) Sig .794	AS with TRKSPAC	0.1834 N(58) Sig .168

Table K.2 (OSUT II - Cont'd.)

AS	-0.2971	AS	0.0712	AS	-0.2338	AS	0.1455	AS	0.4353	AS	-0.0987
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
ACQTIME	Sig .024	ACQHITS	Sig .595	COMPTIME	Sig .077	COMPACCY	Sig .276	TMPERCNT	Sig .001	RSENSE	Sig .457
AS	0.3575	AS	0.0051	AS	0.2805	AS	0.3854	AS	0.3584	MK	0.2724
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
GATES	Sig .006	HITS	Sig .970	RANKINGS	Sig .033	GATERANK	Sig .003	GTHITRNK	Sig .006	MC	Sig .039
MK	0.3614	MK	0.5234	MK	0.5131	MK	0.4899	MK	0.4160	MK	0.4316
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
EI	Sig .005	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .001	ABLE	Sig .001
MK	0.1865	MK	0.1792	MK	0.1218	MK	-0.0139	MK	-0.0242	MK	0.1411
with	N(58)	with	N(58)	with	N(57)	with	N(58)	with	N(58)	with	N(58)
HSY	Sig .161	AGE	Sig .178	HAND	Sig .367	GLASSES	Sig .917	TRKSPEED	Sig .857	TRKACCY	Sig .291
MK	0.1544	MK	-0.2645	MK	-0.0170	MK	-0.2216	MK	0.0935	MK	0.3748
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
TRKSPAC	Sig .247	ACQTIME	Sig .045	ACQHITS	Sig .899	COMPTIME	Sig .095	COMPACCY	Sig .485	TMPERCNT	Sig .004
MK	-0.1259	MK	0.2644	MK	0.1022	MK	0.2918	MK	0.3362	MK	0.3674
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
RSENSE	Sig .346	GATES	Sig .045	HITS	Sig .445	RANKINGS	Sig .026	GATERANK	Sig .010	GTHITRNK	Sig .005
MC	0.5527	MC	0.7166	MC	0.5210	MC	0.4632	MC	0.3991	MC	0.3943
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .002	ABLE	Sig .002
MC	0.0664	MC	0.2362	MC	-0.1669	MC	0.0820	MC	0.2618	MC	0.0961
with	N(58)	with	N(58)	with	N(57)	with	N(58)	with	N(58)	with	N(58)
HSY	Sig .620	AGE	Sig .074	HAND	Sig .215	GLASSES	Sig .541	TRKSPEED	Sig .047	TRKACCY	Sig .473
MC	0.3451	MC	-0.2116	MC	0.2360	MC	-0.3943	MC	0.2658	MC	0.4662
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
TRKSPAC	Sig .008	ACQTIME	Sig .111	ACQHITS	Sig .075	COMPTIME	Sig .002	COMPACCY	Sig .044	TMPERCNT	Sig .000
MC	0.0295	MC	0.1394	MC	0.1510	MC	0.0542	MC	0.1167	MC	0.1922
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
RSENSE	Sig .826	GATES	Sig .297	HITS	Sig .258	RANKINGS	Sig .686	GATERANK	Sig .383	GTHITRNK	Sig .148
EI	0.6729	EI	0.6188	EI	0.5847	EI	0.7265	EI	0.5569	EI	0.1749
with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)	with	N(58)
COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .189

Table K.2 (OSUT II - Cont'd.)

EI with AGE	0.3642 N(58) Sig .005	EI with HAND	0.0560 N(57) Sig .679	EI with GLASSES	0.1495 N(58) Sig .263	EI with TRKSPEED	0.2775 N(58) Sig .035	EI with TRKACCY	0.0973 N(58) Sig .468	EI with TRKSPAC	0.3483 N(58) Sig .007
EI with ACQTIME	-0.3867 N(58) Sig .003	EI with ACQHITS	0.2535 N(58) Sig .055	EI with COMPTIME	-0.3964 N(58) Sig .002	EI with COMPACCY	0.1448 N(58) Sig .278	EI with TMPERCNT	0.4476 N(58) Sig .000	EI with RSENSE	-0.1725 N(58) Sig .195
EI with GATES	0.3564 N(58) Sig .006	EI with HITS	-0.0997 N(58) Sig .457	EI with RANKINGS	0.3113 N(58) Sig .017	EI with GATERANK	0.4034 N(58) Sig .002	EI with GTHITRNK	0.3163 N(58) Sig .016	COMBAT with GTECH	0.7838 N(58) Sig .000
COMBAT with AFQT	0.7853 N(58) Sig .000	COMBAT with COMBATM1	0.7922 N(58) Sig .000	COMBAT with ABLE	0.6288 N(58) Sig .000	COMBAT with HSY	0.2188 N(58) Sig .099	COMBAT with AGE	0.3790 N(58) Sig .003	COMBAT with HAND	-0.1074 N(57) Sig .426
COMBAT with GLASSES	0.1843 N(58) Sig .166	COMBAT with TRKSPEED	0.1624 N(58) Sig .223	COMBAT with TRKACCY	0.0191 N(58) Sig .887	COMBAT with TRKSPAC	0.2002 N(58) Sig .132	COMBAT with ACQTIME	-0.3004 N(58) Sig .022	COMBAT with ACQHITS	0.0463 N(58) Sig .730
COMBAT with COMPTIME	-0.4238 N(58) Sig .001	COMBAT with COMPACCY	0.2518 N(58) Sig .057	COMBAT with TMPERCNT	0.6240 N(58) Sig .000	COMBAT with RSENSE	-0.0703 N(58) Sig .600	COMBAT with GATES	0.2784 N(58) Sig .034	COMBAT with HITS	0.1435 N(58) Sig .283
COMBAT with RANKINGS	0.2557 N(58) Sig .053	COMBAT with GATERANK	0.3227 N(58) Sig .013	COMBAT with GTHITRNK	0.3781 N(58) Sig .003	GTECH with AFQT	0.8953 N(58) Sig .000	GTECH with COMBATM1	0.5190 N(58) Sig .000	GTECH with ABLE	0.7685 N(58) Sig .000
GTECH with HSY	0.1480 N(58) Sig .268	GTECH with AGE	0.3565 N(58) Sig .006	GTECH with HAND	0.0332 N(57) Sig .806	GTECH with GLASSES	0.0801 N(58) Sig .550	GTECH with TRKSPEED	0.1212 N(58) Sig .365	GTECH with TRKACCY	0.1421 N(58) Sig .287
GTECH with TRKSPAC	0.2282 N(58) Sig .085	GTECH with ACQTIME	-0.2280 N(58) Sig .085	GTECH with ACQHITS	0.0241 N(58) Sig .858	GTECH with COMPTIME	-0.4901 N(58) Sig .000	GTECH with COMPACCY	0.2547 N(58) Sig .054	GTECH with TMPERCNT	0.6261 N(58) Sig .000
GTECH with RSENSE	-0.1081 N(58) Sig .419	GTECH with GATES	0.2313 N(58) Sig .081	GTECH with HITS	0.1278 N(58) Sig .339	GTECH with RANKINGS	0.1195 N(58) Sig .372	GTECH with GATERANK	0.2116 N(58) Sig .111	GTECH with GTHITRNK	0.2668 N(58) Sig .043
AFQT with COMBATM1	0.6606 N(58) Sig .000	AFQT with ABLE	0.6500 N(58) Sig .000	AFQT with HSY	0.2251 N(58) Sig .089	AFQT with AGE	0.4603 N(58) Sig .000	AFQT with HAND	0.0035 N(57) Sig .980	AFQT with GLASSES	0.1149 N(58) Sig .391

Table K.2 (OSUT II - Cont'd.)

AFQT 0.1219 with N(58) TRKSPEED Sig .362	AFQT 0.1035 with N(58) TRKACCY Sig .439	AFQT 0.2062 with N(58) TRKSPAC Sig .120	AFQT -0.2007 with N(58) ACQTIME Sig .131	AFQT -0.0391 with N(58) ACQHITS Sig .771	AFQT -0.3475 with N(58) COMPTIME Sig .008
AFQT 0.2017 with N(58) COMPACCY Sig .129	AFQT 0.5348 with N(58) TMPERCNT Sig .000	AFQT -0.1022 with N(58) RSENSE Sig .445	AFQT 0.3254 with N(58) GATES Sig .013	AFQT 0.0774 with N(58) HITS Sig .563	AFQT 0.2828 with N(58) RANKINGS Sig .031
AFQT 0.3674 with N(58) GATERANK Sig .005	AFQT 0.3823 with N(58) GTHITRNK Sig .003	COMBATM1 0.4627 with N(58) ABLE Sig .000	COMBATM1 0.2267 with N(58) HSY Sig .087	COMBATM1 0.4122 with N(58) AGE Sig .001	COMBATM1 -0.0892 with N(57) HAND Sig .510
COMBATM1 0.2687 with N(58) GLASSES Sig .041	COMBATM1 0.1691 with N(58) TRKSPEED Sig .205	COMBATM1 -0.0588 with N(58) TRKACCY Sig .661	COMBATM1 0.1524 with N(58) TRKSPAC Sig .253	COMBATM1 -0.3084 with N(58) ACQTIME Sig .019	COMBATM1 -0.0105 with N(58) ACQHITS Sig .938
COMBATM1 -0.2611 with N(58) COMPTIME Sig .048	COMBATM1 0.0907 with N(58) COMPACCY Sig .498	COMBATM1 0.4196 with N(58) TMPERCNT Sig .001	COMBATM1 -0.0907 with N(58) RSENSE Sig .498	COMBATM1 0.3700 with N(58) GATES Sig .004	COMBATM1 -0.0347 with N(58) HITS Sig .796
COMBATM1 0.5063 with N(58) RANKINGS Sig .000	COMBATM1 0.5300 with N(58) GATERANK Sig .000	COMBATM1 0.4695 with N(58) GTHITRNK Sig .000	ABLE 0.0895 with N(58) HSY Sig .504	ABLE 0.2893 with N(58) AGE Sig .028	ABLE -0.0075 with N(58) HAND Sig .955
ABLE -0.0264 with N(58) GLASSES Sig .844	ABLE 0.0757 with N(60) TRKSPEED Sig .566	ABLE 0.0905 with N(60) TRKACCY Sig .492	ABLE 0.1192 with N(60) TRKSPAC Sig .364	ABLE -0.0580 with N(60) ACQTIME Sig .660	ABLE 0.1056 with N(60) ACQHITS Sig .422
ABLE -0.2304 with N(60) COMPTIME Sig .077	ABLE 0.0912 with N(60) COMPACCY Sig .488	ABLE 0.1560 with N(60) TMPERCNT Sig .234	ABLE -0.1993 with N(60) RSENSE Sig .127	ABLE 0.2097 with N(60) GATES Sig .108	ABLE -0.0055 with N(60) HITS Sig .967
ABLE 0.0193 with N(60) RANKINGS Sig .884	ABLE 0.1388 with N(60) GATERANK Sig .290	ABLE 0.1252 with N(60) GTHITRNK Sig .341	HSY 0.4998 with N(58) AGE Sig .000	HSY 0.1799 with N(57) HAND Sig .180	HSY 0.0913 with N(58) GLASSES Sig .496
HSY 0.0296 with N(58) TRKSPEED Sig .825	HSY -0.1033 with N(58) TRKACCY Sig .440	HSY -0.0109 with N(58) TRKSPAC Sig .936	HSY -0.2250 with N(58) ACQTIME Sig .089	HSY 0.0551 with N(58) ACQHITS Sig .681	HSY 0.0204 with N(58) COMPTIME Sig .879
HSY 0.0937 with N(58) COMPACCY Sig .484	HSY 0.1978 with N(58) TMPERCNT Sig .137	HSY 0.0380 with N(58) RSENSE Sig .777	HSY 0.1628 with N(58) GATES Sig .222	HSY 0.0252 with N(58) HITS Sig .851	HSY 0.3194 with N(58) RANKINGS Sig .015

Table K.2 (OSUT II - Cont'd.)

HSY with GATERANK 0.2919 N(58) Sig .026	HSY with GTHITRNK 0.2835 N(58) Sig .031	AGE with HAND 0.0935 N(57) Sig .488	AGE with GLASSES 0.0534 N(58) Sig .691	AGE with TRKSPEED 0.0660 N(58) Sig .622	AGE with TRKACCY -0.0877 N(58) Sig .513
AGE with TRKSPAC 0.0119 N(58) Sig .930	AGE with ACQTIME 0.0911 N(58) Sig .497	AGE with ACQHITS 0.0187 N(58) Sig .889	AGE with COMPTIME -0.0614 N(58) Sig .647	AGE with COMPACCY 0.0706 N(58) Sig .599	AGE with TMPERCNT 0.0502 N(58) Sig .708
AGE with RSENSE -0.2358 N(58) Sig .075	AGE with GATES 0.3073 N(58) Sig .019	AGE with HITS -0.0011 N(58) Sig .994	AGE with RANKINGS 0.3428 N(58) Sig .008	AGE with GATERANK 0.3931 N(58) Sig .002	AGE with GTHITRNK 0.3620 N(58) Sig .005
HAND with GLASSES -0.1512 N(57) Sig .262	HAND with TRKSPEED 0.0165 N(59) Sig .901	HAND with TRKACCY -0.0797 N(59) Sig .548	HAND with TRKSPAC 0.0228 N(59) Sig .863	HAND with ACQTIME -0.2104 N(59) Sig .110	HAND with ACQHITS 0.1553 N(58) Sig .240
HAND with COMPTIME -0.0785 N(59) Sig .554	HAND with COMPACCY 0.1442 N(59) Sig .276	HAND with TMPERCNT -0.0265 N(59) Sig .842	HAND with RSENSE 0.0244 N(58) Sig .855	HAND with GATES 0.1728 N(58) Sig .190	HAND with HITS 0.0100 N(59) Sig .940
HAND with RANKINGS 0.0610 N(59) Sig .646	HAND with GATERANK 0.1435 N(59) Sig .278	HAND with GTHITRNK 0.1378 N(59) Sig .298	GLASSES with TRKSPEED 0.2189 N(58) Sig .099	GLASSES with TRKACCY -0.1619 N(58) Sig .225	GLASSES with TRKSPAC 0.0747 N(58) Sig .577
GLASSES with ACQTIME -0.0897 N(58) Sig .503	GLASSES with ACQHITS -0.1432 N(58) Sig .284	GLASSES with COMPTIME -0.0935 N(58) Sig .485	GLASSES with COMPACCY -0.0049 N(58) Sig .971	GLASSES with TMPERCNT -0.0586 N(58) Sig .662	GLASSES with RSENSE 0.1769 N(58) Sig .184
GLASSES with GATES -0.0081 N(58) Sig .952	GLASSES with HITS 0.0052 N(58) Sig .969	GLASSES with RANKINGS 0.0502 N(58) Sig .708	GLASSES with GATERANK 0.0257 N(58) Sig .848	GLASSES with GTHITRNK 0.0266 N(58) Sig .843	TRKSPEED with TRKACCY -0.3107 N(60) Sig .016
TRKSPEED with TRKSPAC 0.7983 N(60) Sig .000	TRKSPEED with ACQTIME -0.4122 N(60) Sig .001	TRKSPEED with ACQHITS -0.1391 N(60) Sig .289	TRKSPEED with COMPTIME -0.2264 N(60) Sig .082	TRKSPEED with COMPACCY -0.0158 N(60) Sig .905	TRKSPEED with TMPERCNT 0.1552 N(60) Sig .236
TRKSPEED with RSENSE 0.1315 N(60) Sig .317	TRKSPEED with GATES 0.1414 N(60) Sig .281	TRKSPEED with HITS -0.1352 N(60) Sig .303	TRKSPEED with RANKINGS 0.2981 N(60) Sig .021	TRKSPEED with GATERANK 0.2664 N(60) Sig .040	TRKSPEED with GTHITRNK 0.1706 N(60) Sig .193
TRKACCY with TRKSPAC 0.2717 N(60) Sig .036	TRKACCY with ACQTIME 0.0110 N(60) Sig .934	TRKACCY with ACQHITS 0.2334 N(60) Sig .073	TRKACCY with COMPTIME 0.0932 N(60) Sig .478	TRKACCY with COMPACCY 0.0964 N(60) Sig .464	TRKACCY with TMPERCNT 0.1553 N(60) Sig .236

Table K.2 (OSUT II - Cont'd.)

TRKACCY	-0.0141	TRKACCY	-0.0535	TRKACCY	0.0958	TRKACCY	-0.0714	TRKACCY	-0.0757	TRKACCY	-0.0164
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
RSENSE	Sig .915	GATES	Sig .685	HITS	Sig .466	RANKINGS	Sig .588	GATERANK	Sig .565	GTHITRNK	Sig .901
TRKSPAC	-0.4345	TRKSPAC	0.0371	TRKSPAC	-0.2208	TRKSPAC	0.0528	TRKSPAC	0.2952	TRKSPAC	0.1209
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
ACQTIME	Sig .001	ACQHITS	Sig .778	COMPTIME	Sig .090	COMPACCY	Sig .689	TMPERCNT	Sig .022	RSENSE	Sig .357
TRKSPAC	0.1583	TRKSPAC	-0.0327	TRKSPAC	0.2835	TRKSPAC	0.2678	TRKSPAC	0.2291	ACQTIME	-0.0469
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
GATES	Sig .227	HITS	Sig .804	RANKINGS	Sig .028	GATERANK	Sig .039	GTHITRNK	Sig .078	ACQHITS	Sig .722
ACQTIME	0.2796	ACQTIME	0.0134	ACQTIME	-0.3285	ACQTIME	-0.0978	ACQTIME	-0.2190	ACQTIME	0.0720
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
COMPTIME	Sig .030	COMPACCY	Sig .919	TMPERCNT	Sig .010	RSENSE	Sig .457	GATES	Sig .093	HITS	Sig .585
ACQTIME	-0.3477	ACQTIME	-0.3435	ACQTIME	-0.2771	ACQHITS	-0.1550	ACQHITS	0.1749	ACQHITS	0.1664
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
RANKINGS	Sig .006	GATERANK	Sig .007	GTHITRNK	Sig .032	COMPTIME	Sig .237	COMPACCY	Sig .181	TMPERCNT	Sig .204
ACQHITS	0.1379	ACQHITS	0.0701	ACQHITS	-0.0541	ACQHITS	0.0594	ACQHITS	0.0785	ACQHITS	0.0423
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
RSENSE	Sig .293	GATES	Sig .594	HITS	Sig .681	RANKINGS	Sig .652	GATERANK	Sig .551	GTHITRNK	Sig .748
COMPTIME	-0.3167	COMPTIME	-0.4368	COMPTIME	0.0741	COMPTIME	-0.0246	COMPTIME	0.0208	COMPTIME	-0.2074
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
COMPACCY	Sig .014	TMPERCNT	Sig .000	RSENSE	Sig .574	GATES	Sig .852	HITS	Sig .875	RANKINGS	Sig .112
COMPTIME	-0.1406	COMPTIME	-0.1182	COMPACCY	0.2387	COMPACCY	-0.1282	COMPACCY	-0.1648	COMPACCY	-0.0611
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
GATERANK	Sig .284	GTHITRNK	Sig .368	TMPERCNT	Sig .066	RSENSE	Sig .329	GATES	Sig .208	HITS	Sig .643
COMPACCY	-0.0305	COMPACCY	-0.1184	COMPACCY	-0.1435	TMPERCNT	-0.0982	TMPERCNT	0.1344	TMPERCNT	0.0856
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
RANKINGS	Sig .817	GATERANK	Sig .368	GTHITRNK	Sig .274	RSENSE	Sig .456	GATES	Sig .306	HITS	Sig .516
TMPERCNT	0.1851	TMPERCNT	0.1937	TMPERCNT	0.2267	RSENSE	-0.0875	RSENSE	0.3252	RSENSE	0.0832
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
RANKINGS	Sig .157	GATERANK	Sig .138	GTHITRNK	Sig .082	GATES	Sig .506	HITS	Sig .011	RANKINGS	Sig .527
RSENSE	-0.0026	RSENSE	0.1792	GATES	-0.0749	GATES	0.3607	GATES	0.8249	GATES	0.7202
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
GATERANK	Sig .984	GTHITRNK	Sig .171	HITS	Sig .570	RANKINGS	Sig .005	GATERANK	Sig .000	GTHITRNK	Sig .000
HITS	-0.1894	HITS	-0.1602	HITS	0.4106	RANKINGS	0.8247	RANKINGS	0.6560	GATERANK	0.8342
with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)	with	N(60)
RANKINGS	Sig .147	GATERANK	Sig .221	GTHITRNK	Sig .001	GATERANK	Sig .000	GTHITRNK	Sig .000	GTHITRNK	Sig .000

Table K.3

Intercorrelations Among Variables for Combined OSUT

Variable Pair		Variable Pair		Variable Pair		Variable Pair		Variable Pair		Variable Pair	
GS	0.4942	GS	0.6964	GS	0.5343	GS	0.1780	GS	0.2776	GS	0.4532
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
AR	Sig .000	WK	Sig .000	PC	Sig .000	NO	Sig .032	CS	Sig .001	AS	Sig .000
GS	0.5316	GS	0.4543	GS	0.6674	GS	0.5980	GS	0.6648	GS	0.6580
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
MK	Sig .000	MC	Sig .000	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000
GS	0.5703	GS	0.6635	GS	0.1815	GS	0.3721	GS	0.0057	GS	0.1761
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .028	AGE	Sig .000	HAND	Sig .946	GLASSES	Sig .033
GS	0.2957	GS	0.1704	GS	0.3635	GS	-0.2272	GS	0.0884	GS	-0.4481
with	N(145)	with	N(145)	with	N(145)	with	N(146)	with	N(146)	with	N(146)
TRKSPEED	Sig .000	TRKACCY	Sig .040	TRKSPAC	Sig .000	ACQTIME	Sig .006	ACQHITS	Sig .283	COMPTIME	Sig .000
GS	0.1899	GS	0.4218	GS	0.0901	GS	0.2426	GS	0.0629	GS	0.2328
with	N(146)	with	N(146)	with	N(146)	with	N(148)	with	N(140)	with	N(146)
COMPACCY	Sig .022	TMPERCNT	Sig .000	RSENSE	Sig .279	GATES	Sig .003	HITS	Sig .460	RANKINGS	Sig .005
GS	0.2821	GS	0.2617	AR	0.4800	AR	0.4712	AR	0.3708	AR	0.2480
with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
GATERANK	Sig .001	GTHITRNK	Sig .002	WK	Sig .000	PC	Sig .000	NO	Sig .000	CS	Sig .003
AR	0.4618	AR	0.7043	AR	0.5032	AR	0.4534	AR	0.8105	AR	0.8835
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
AS	Sig .000	MK	Sig .000	MC	Sig .000	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000
AR	0.8331	AR	0.5564	AR	0.6507	AR	0.1889	AR	0.1846	AR	0.0208
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .016	AGE	Sig .019	HAND	Sig .804
AR	0.1470	AR	0.1544	AR	0.1556	AR	0.2441	AR	-0.1923	AR	-0.0186
with	N(146)	with	N(145)	with	N(145)	with	N(145)	with	N(146)	with	N(146)
GLASSES	Sig .077	TRKSPEED	Sig .064	TRKACCY	Sig .062	TRKSPAC	Sig .003	ACQTIME	Sig .020	ACQHITS	Sig .814
AR	-0.4458	AR	0.3344	AR	0.4671	AR	0.1067	AR	0.1678	AR	0.0670
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(140)
COMPTIME	Sig .000	COMPACCY	Sig .000	TMPERCNT	Sig .000	RSENSE	Sig .200	GATES	Sig .043	HITS	Sig .432

Table K.3 (Combined OSUT - Cont'd.)

AR	0.1801	AR	0.2297	AR	0.2675	WK	0.7155	WK	0.2095	WK	0.2782
with	N(146)	with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(146)
RANKINGS	Sig .030	GATERANK	Sig .005	GTHITRNK	Sig .001	PC	Sig .000	NO	Sig .011	CS	Sig .001
WK	0.4565	WK	0.4754	WK	0.4600	WK	0.6506	WK	0.5811	WK	0.8045
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
AS	Sig .000	MK	Sig .000	MC	Sig .000	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000
WK	0.7585	WK	0.5773	WK	0.7230	WK	0.1387	WK	0.3369	WK	0.0427
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .093	AGE	Sig .000	HAND	Sig .609
WK	0.2365	WK	0.2872	WK	0.1654	WK	0.3548	WK	-0.1698	WK	0.1080
with	N(146)	with	N(145)	with	N(145)	with	N(145)	with	N(146)	with	N(146)
GLASSES	Sig .004	TRKSPEED	Sig .000	TRKACCY	Sig .047	TRKSPAC	Sig .000	ACQTIME	Sig .040	ACQHITS	Sig .194
WK	-0.6001	WK	0.2745	WK	0.4343	WK	0.0578	WK	0.1731	WK	0.0749
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(140)
COMPTIME	Sig .000	COMPACCY	Sig .001	TMPERCNT	Sig .000	RSENSE	Sig .488	GATES	Sig .037	HITS	Sig .379
WK	0.2044	WK	0.2340	WK	0.2418	PC	0.2227	PC	0.2527	PC	0.3913
with	N(146)	with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(146)
RANKINGS	Sig .013	GATERANK	Sig .004	GTHITRNK	Sig .004	NO	Sig .007	CS	Sig .002	AS	Sig .000
PC	0.4169	PC	0.4155	PC	0.5224	PC	0.5433	PC	0.7447	PC	0.6980
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
MK	Sig .000	MC	Sig .000	EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000
PC	0.5022	PC	0.6293	PC	0.1381	PC	0.2991	PC	0.0644	PC	0.1397
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .096	AGE	Sig .000	HAND	Sig .440	GLASSES	Sig .093
PC	0.2023	PC	0.1867	PC	0.3019	PC	-0.1394	PC	0.0395	PC	-0.4728
with	N(145)	with	N(145)	with	N(145)	with	N(146)	with	N(146)	with	N(146)
TRKSPEED	Sig .015	TRKACCY	Sig .025	TRKSPAC	Sig .000	ACQTIME	Sig .093	ACQHITS	Sig .636	COMPTIME	Sig .000
PC	0.2873	PC	0.3561	PC	-0.0231	PC	0.1914	PC	0.0213	PC	0.2124
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(140)	with	N(146)
COMPACCY	Sig .000	TMPERCNT	Sig .000	RSENSE	Sig .782	GATES	Sig .021	HITS	Sig .802	RANKINGS	Sig .010
PC	0.2647	PC	0.2538	NO	0.5427	NO	0.2365	NO	0.3903	NO	0.0894
with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
GATERANK	Sig .001	GTHITRNK	Sig .002	CS	Sig .000	AS	Sig .004	MK	Sig .000	MC	Sig .283

Table K.3 (Combined OSUT - Cont'd.)

ND with EI 0.1725 N(146) Sig .037	ND with COMBAT 0.4228 N(146) Sig .000	ND with GTECH 0.3541 N(146) Sig .000	ND with AFQT 0.5765 N(146) Sig .000	ND with COMBATM1 0.6884 N(146) Sig .000	ND with ABLE 0.3281 N(146) Sig .000
ND with HSY 0.0894 N(146) Sig .283	ND with AGE 0.1980 N(146) Sig .017	ND with HAND -0.1113 N(146) Sig .181	ND with GLASSES 0.1452 N(146) Sig .080	ND with TRKSPEED 0.2026 N(145) Sig .015	ND with TRKACCY -0.0086 N(145) Sig .918
ND with TRKSPAC 0.1538 N(145) Sig .065	ND with ACQTIME -0.1966 N(146) Sig .017	ND with ACQHITS -0.0863 N(146) Sig .301	ND with COMPTIME -0.2519 N(146) Sig .002	ND with COMPACCY 0.0816 N(146) Sig .328	ND with TMPERCNT 0.2880 N(146) Sig .000
ND with RSENSE 0.0554 N(146) Sig .506	ND with GATES 0.1990 N(146) Sig .016	ND with HITS 0.1802 N(140) Sig .033	ND with RANKINGS 0.3369 N(146) Sig .000	ND with GATERANK 0.3209 N(146) Sig .000	ND with GTHITRNK 0.3648 N(140) Sig .000
CS with AS 0.1133 N(146) Sig .173	CS with MK 0.3772 N(146) Sig .000	CS with MC 0.0646 N(146) Sig .439	CS with EI 0.2098 N(146) Sig .011	CS with COMBAT 0.4575 N(146) Sig .000	CS with GTECH 0.3076 N(146) Sig .000
CS with AFQT 0.4466 N(146) Sig .000	CS with COMBATM1 0.6354 N(146) Sig .000	CS with ABLE 0.3323 N(146) Sig .000	CS with HSY 0.0830 N(146) Sig .319	CS with AGE 0.2025 N(146) Sig .014	CS with HAND -0.0276 N(146) Sig .741
CS with GLASSES 0.2546 N(146) Sig .002	CS with TRKSPEED 0.2198 N(145) Sig .008	CS with TRKACCY 0.0117 N(145) Sig .889	CS with TRKSPAC 0.2038 N(145) Sig .014	CS with ACQTIME -0.2476 N(146) Sig .003	CS with ACQHITS 0.0029 N(146) Sig .973
CS with COMPTIME -0.3302 N(146) Sig .000	CS with COMPACCY 0.0274 N(146) Sig .742	CS with TMPERCNT 0.2666 N(146) Sig .001	CS with RSENSE 0.0584 N(146) Sig .484	CS with GATES 0.1585 N(146) Sig .056	CS with HITS 0.1007 N(140) Sig .236
CS with RANKINGS 0.3142 N(146) Sig .000	CS with GATERANK 0.2956 N(146) Sig .000	CS with GTHITRNK 0.3038 N(140) Sig .000	AS with MK 0.3675 N(146) Sig .000	AS with MC 0.5887 N(146) Sig .000	AS with EI 0.6171 N(146) Sig .000
AS with COMBAT 0.7728 N(146) Sig .000	AS with GTECH 0.5300 N(146) Sig .000	AS with AFQT 0.5151 N(146) Sig .000	AS with COMBATM1 0.7207 N(146) Sig .000	AS with ABLE 0.3972 N(146) Sig .000	AS with HSY 0.2074 N(146) Sig .012
AS with AGE 0.2958 N(146) Sig .000	AS with HAND 0.1618 N(146) Sig .051	AS with GLASSES 0.1581 N(146) Sig .057	AS with TRKSPEED 0.2042 N(145) Sig .014	AS with TRKACCY 0.1186 N(145) Sig .156	AS with TRKSPAC 0.2693 N(145) Sig .001

Table K.3 (Combined OSUT - Cont'd.)

AS	-0.1753	AS	-0.0163	AS	-0.3257	AS	0.2217	AS	0.3588	AS	0.0765
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
ACQTIME	Sig .034	ACQHITS	Sig .845	COMPTIME	Sig .000	COMPACCY	Sig .007	TMPERCNT	Sig .000	RSENSE	Sig .359
AS	0.3402	AS	-0.0899	AS	0.2967	AS	0.4074	AS	0.3350	MK	0.4108
with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(140)	with	N(146)
GATES	Sig .000	HITS	Sig .291	RANKINGS	Sig .000	GATERANK	Sig .000	GTHITRNK	Sig .000	MC	Sig .000
MK	0.4079	MK	0.6632	MK	0.6921	MK	0.6998	MK	0.5523	MK	0.5785
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000
MK	0.2301	MK	0.2057	MK	-0.0728	MK	0.2725	MK	0.2001	MK	0.1677
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(145)	with	N(145)
HSY	Sig .005	AGE	Sig .013	HAND	Sig .382	GLASSES	Sig .001	TRKSPEED	Sig .016	TRKACCY	Sig .044
MK	0.3127	MK	-0.2102	MK	-0.0205	MK	-0.4307	MK	0.2571	MK	0.4123
with	N(145)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
TRKSPAC	Sig .000	ACQTIME	Sig .011	ACQHITS	Sig .806	COMPTIME	Sig .000	COMPACCY	Sig .002	TMPERCNT	Sig .000
MK	0.1462	MK	0.2101	MK	0.0498	MK	0.3346	MK	0.3500	MK	0.3542
with	N(146)	with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(140)
RSENSE	Sig .078	GATES	Sig .011	HITS	Sig .559	RANKINGS	Sig .000	GATERANK	Sig .000	GTHITRNK	Sig .000
MC	0.5381	MC	0.7731	MC	0.5627	MC	0.4933	MC	0.4708	MC	0.3780
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
EI	Sig .000	COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000
MC	0.0999	MC	0.1415	MC	-0.0351	MC	0.0643	MC	0.2221	MC	0.2197
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(145)	with	N(145)
HSY	Sig .230	AGE	Sig .089	HAND	Sig .674	GLASSES	Sig .441	TRKSPEED	Sig .007	TRKACCY	Sig .008
MC	0.3600	MC	-0.2288	MC	0.1837	MC	-0.3059	MC	0.2176	MC	0.3132
with	N(145)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
TRKSPAC	Sig .000	ACQTIME	Sig .005	ACQHITS	Sig .026	COMPTIME	Sig .000	COMPACCY	Sig .008	TMPERCNT	Sig .000
MC	0.1678	MC	0.2731	MC	0.0718	MC	0.2020	MC	0.2946	MC	0.2972
with	N(146)	with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(140)
RSENSE	Sig .043	GATES	Sig .001	HITS	Sig .399	RANKINGS	Sig .014	GATERANK	Sig .000	GTHITRNK	Sig .000
EI	0.6448	EI	0.6228	EI	0.5882	EI	0.7326	EI	0.5782	EI	0.1705
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
COMBAT	Sig .000	GTECH	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .040

Table K.3 (Combined OSUT - Cont'd.)

EI	0.2549	EI	0.1041	EI	0.2305	EI	0.2819	EI	0.2033	EI	0.3662
with	N(146)	with	N(146)	with	N(146)	with	N(145)	with	N(145)	with	N(145)
AGE	Sig .002	HAND	Sig .211	GLASSES	Sig .005	TRKSPEED	Sig .001	TRKACCY	Sig .014	TRKSPAC	Sig .000
EI	-0.3079	EI	0.1779	EI	-0.3909	EI	0.1679	EI	0.3943	EI	0.0622
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
ACQTIME	Sig .000	ACQHITS	Sig .032	COMPTIME	Sig .000	COMPACCY	Sig .043	TMPERCNT	Sig .000	RSENSE	Sig .455
EI	0.2969	EI	-0.0721	EI	0.2338	EI	0.3344	EI	0.2677	COMBAT	0.8285
with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(140)	with	N(146)
GATES	Sig .000	HITS	Sig .397	RANKINGS	Sig .005	GATERANK	Sig .000	GTHITRNK	Sig .001	GTECH	Sig .000
COMBAT	0.8156	COMBAT	0.8260	COMBAT	0.6281	COMBAT	0.2106	COMBAT	0.2879	COMBAT	0.0430
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .011	AGE	Sig .000	HAND	Sig .607
COMBAT	0.2102	COMBAT	0.2721	COMBAT	0.1852	COMBAT	0.3746	COMBAT	-0.2930	COMBAT	0.0538
with	N(146)	with	N(145)	with	N(145)	with	N(145)	with	N(146)	with	N(146)
GLASSES	Sig .011	TRKSPEED	Sig .001	TRKACCY	Sig .026	TRKSPAC	Sig .000	ACQTIME	Sig .000	ACQHITS	Sig .518
COMBAT	-0.4944	COMBAT	0.2935	COMBAT	0.5009	COMBAT	0.1491	COMBAT	0.3300	COMBAT	0.0529
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(140)
COMPTIME	Sig .000	COMPACCY	Sig .000	TMPERCNT	Sig .000	RSENSE	Sig .072	GATES	Sig .000	HITS	Sig .535
COMBAT	0.3378	COMBAT	0.4242	COMBAT	0.4160	GTECH	0.9339	GTECH	0.6573	GTECH	0.7892
with	N(146)	with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(146)
RANKINGS	Sig .000	GATERANK	Sig .000	GTHITRNK	Sig .000	AFQT	Sig .000	COMBATM1	Sig .000	ABLE	Sig .000
GTECH	0.1994	GTECH	0.2988	GTECH	0.0407	GTECH	0.2074	GTECH	0.2416	GTECH	0.1877
with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(145)	with	N(145)
HSY	Sig .016	AGE	Sig .000	HAND	Sig .625	GLASSES	Sig .012	TRKSPEED	Sig .003	TRKACCY	Sig .024
GTECH	0.3394	GTECH	-0.2077	GTECH	0.0258	GTECH	-0.5907	GTECH	0.3597	GTECH	0.5165
with	N(145)	with	N(146)	with	N(146)	with	N(146)	with	N(146)	with	N(146)
TRKSPAC	Sig .000	ACQTIME	Sig .012	ACQHITS	Sig .757	COMPTIME	Sig .000	COMPACCY	Sig .000	TMPERCNT	Sig .000
GTECH	0.0888	GTECH	0.2059	GTECH	0.0763	GTECH	0.2234	GTECH	0.2781	GTECH	0.3052
with	N(146)	with	N(146)	with	N(140)	with	N(146)	with	N(146)	with	N(140)
RSENSE	Sig .286	GATES	Sig .013	HITS	Sig .370	RANKINGS	Sig .007	GATERANK	Sig .001	GTHITRNK	Sig .000
AFQT	0.7662	AFQT	0.3959	AFQT	0.0509	AFQT	0.4301	AFQT	0.0139	AFQT	-0.1444
with	N(146)	with	N(148)	with	N(148)	with	N(148)	with	N(148)	with	N(148)
COMBATM1	Sig .000	ABLE	Sig .000	HSY	Sig .539	AGE	Sig .000	HAND	Sig .867	GLASSES	Sig .080

Table K.3 (Combined OSUT - Cont'd.)

AFQT 0.2382 with N(147) TRKSPEED Sig .004	AFQT 0.1712 with N(147) TRKACCY Sig .038	AFQT 0.3149 with N(147) TRKSPAC Sig .000	AFQT -0.2041 with N(148) ACQTIME Sig .013	AFQT 0.0015 with N(148) ACQHITS Sig .986	AFQT -0.5159 with N(148) COMPTIME Sig .000
AFQT 0.3011 with N(148) COMPACCY Sig .000	AFQT 0.4816 with N(148) TMPERCNT Sig .000	AFQT 0.1288 with N(148) RSENSE Sig .119	AFQT 0.2039 with N(148) GATES Sig .013	AFQT 0.1065 with N(142) HITS Sig .207	AFQT 0.3044 with N(148) RANKINGS Sig .000
AFQT 0.3247 with N(148) GATERANK Sig .000	AFQT 0.3557 with N(142) GTHITRNK Sig .000	COMBATM1 0.5905 with N(146) ABLE Sig .000	COMBATM1 0.1993 with N(146) HSY Sig .016	COMBATM1 0.3414 with N(146) AGE Sig .000	COMBATM1 0.0473 with N(146) HAND Sig .571
COMBATM1 0.2784 with N(146) GLASSES Sig .001	COMBATM1 0.3237 with N(145) TRKSPEED Sig .000	COMBATM1 0.1185 with N(145) TRKACCY Sig .156	COMBATM1 0.3549 with N(145) TRKSPAC Sig .000	COMBATM1 -0.3313 with N(146) ACQTIME Sig .000	COMBATM1 0.0296 with N(146) ACQHITS Sig .723
COMBATM1 -0.4637 with N(146) COMPTIME Sig .000	COMBATM1 0.1833 with N(146) COMPACCY Sig .027	COMBATM1 0.4710 with N(146) TMPERCNT Sig .000	COMBATM1 0.0904 with N(146) RSENSE Sig .278	COMBATM1 0.3602 with N(146) GATES Sig .000	COMBATM1 0.0383 with N(140) HITS Sig .654
COMBATM1 0.4210 with N(146) RANKINGS Sig .000	COMBATM1 0.4873 with N(146) GATERANK Sig .000	COMBATM1 0.4524 with N(140) GTHITRNK Sig .000	ABLE 0.3483 with N(148) HSY Sig .000	ABLE -0.1839 with N(148) AGE Sig .025	ABLE -0.0560 with N(148) HAND Sig .499
ABLE 0.5101 with N(148) GLASSES Sig .000	ABLE 0.1977 with N(147) TRKSPEED Sig .016	ABLE 0.1532 with N(147) TRKACCY Sig .064	ABLE 0.2578 with N(147) TRKSPAC Sig .002	ABLE -0.1262 with N(148) ACQTIME Sig .126	ABLE 0.1047 with N(148) ACQHITS Sig .205
ABLE -0.4107 with N(148) COMPTIME Sig .000	ABLE 0.1747 with N(148) COMPACCY Sig .034	ABLE 0.2953 with N(148) TMPERCNT Sig .000	ABLE -0.0424 with N(148) RSENSE Sig .609	ABLE 0.2113 with N(148) GATES Sig .010	ABLE 0.0577 with N(142) HITS Sig .495
ABLE 0.1015 with N(148) RANKINGS Sig .219	ABLE 0.1866 with N(148) GATERANK Sig .023	ABLE 0.1874 with N(142) GTHITRNK Sig .026	HSY -0.0845 with N(148) AGE Sig .307	HSY -0.0285 with N(148) HAND Sig .731	HSY 0.5565 with N(148) GLASSES Sig .000
HSY 0.0223 with N(147) TRKSPEED Sig .789	HSY -0.0294 with N(147) TRKACCY Sig .724	HSY 0.0228 with N(147) TRKSPAC Sig .784	HSY -0.0323 with N(148) ACQTIME Sig .697	HSY -0.0331 with N(148) ACQHITS Sig .689	HSY -0.0461 with N(148) COMPTIME Sig .578
HSY 0.0866 with N(148) COMPACCY Sig .295	HSY 0.0848 with N(148) TMPERCNT Sig .305	HSY 0.0358 with N(148) RSENSE Sig .666	HSY 0.1933 with N(148) GATES Sig .019	HSY -0.0256 with N(142) HITS Sig .762	HSY 0.2039 with N(148) RANKINGS Sig .013

Table K.3 (Combined OSUT - Cont'd.)

HSY 0.2539 with N(148) GATERANK Sig .002	HSY 0.2174 with N(142) GTHITRNK Sig .009	AGE 0.0312 with N(148) HAND Sig .706	AGE -0.5953 with N(148) GLASSES Sig .000	AGE -0.1014 with N(147) TRKSPEED Sig .222	AGE 0.0357 with N(147) TRKACCY Sig .668
AGE -0.0766 with N(147) TRKSPAC Sig .356	AGE -0.0130 with N(148) ACQTIME Sig .876	AGE 0.0563 with N(148) ACQHITS Sig .497	AGE -0.0843 with N(148) COMPTIME Sig .309	AGE 0.0298 with N(148) COMPACCY Sig .719	AGE 0.1226 with N(148) TMPERCNT Sig .138
AGE 0.0782 with N(148) RSENSE Sig .345	AGE 0.0377 with N(148) GATES Sig .649	AGE 0.0665 with N(142) HITS Sig .432	AGE 0.2468 with N(148) RANKINGS Sig .002	AGE 0.1821 with N(148) GATERANK Sig .027	AGE 0.2124 with N(142) GTHITRNK Sig .011
HAND -0.0396 with N(148) GLASSES Sig .632	HAND -0.0003 with N(147) TRKSPEED Sig .997	HAND -0.2986 with N(147) TRKACCY Sig .000	HAND -0.1306 with N(147) TRKSPAC Sig .115	HAND 0.1193 with N(148) ACQTIME Sig .149	HAND -0.0361 with N(148) ACQHITS Sig .663
HAND -0.0431 with N(148) COMPTIME Sig .603	HAND 0.0764 with N(148) COMPACCY Sig .356	HAND -0.0577 with N(148) TMPERCNT Sig .486	HAND 0.0375 with N(148) RSENSE Sig .651	HAND -0.1314 with N(148) GATES Sig .111	HAND -0.2100 with N(142) HITS Sig .012
HAND -0.0572 with N(148) RANKINGS Sig .490	HAND -0.1026 with N(148) GATERANK Sig .215	HAND -0.1692 with N(142) GTHITRNK Sig .044	GLASSES 0.1729 with N(147) TRKSPEED Sig .036	GLASSES -0.0441 with N(147) TRKACCY Sig .596	GLASSES 0.1194 with N(147) TRKSPAC Sig .150
GLASSES -0.0685 with N(148) ACQTIME Sig .408	GLASSES 0.0009 with N(148) ACQHITS Sig .991	GLASSES -0.0706 with N(148) COMPTIME Sig .394	GLASSES 0.0402 with N(148) COMPACCY Sig .627	GLASSES 0.0794 with N(148) TMPERCNT Sig .337	GLASSES -0.1421 with N(148) RSENSE Sig .085
GLASSES 0.1263 with N(148) GATES Sig .126	GLASSES -0.0031 with N(142) HITS Sig .971	GLASSES 0.0302 with N(148) RANKINGS Sig .716	GLASSES 0.0790 with N(148) GATERANK Sig .340	GLASSES 0.0462 with N(142) GTHITRNK Sig .585	TRKSPEED -0.1851 with N(147) TRKACCY Sig .025
TRKSPEED 0.7801 with N(147) TRKSPAC Sig .000	TRKSPEED -0.3596 with N(147) ACQTIME Sig .000	TRKSPEED -0.0574 with N(147) ACQHITS Sig .490	TRKSPEED -0.2553 with N(147) COMPTIME Sig .002	TRKSPEED 0.0772 with N(147) COMPACCY Sig .352	TRKSPEED 0.2120 with N(147) TMPERCNT Sig .010
TRKSPEED 0.1476 with N(147) RSENSE Sig .074	TRKSPEED 0.1653 with N(147) GATES Sig .045	TRKSPEED 0.0044 with N(141) HITS Sig .959	TRKSPEED 0.1591 with N(147) RANKINGS Sig .054	TRKSPEED 0.1962 with N(147) GATERANK Sig .017	TRKSPEED 0.1767 with N(141) GTHITRNK Sig .036
TRKACCY 0.4166 with N(147) TRKSPAC Sig .000	TRKACCY -0.1486 with N(147) ACQTIME Sig .073	TRKACCY 0.1975 with N(147) ACQHITS Sig .016	TRKACCY -0.0461 with N(147) COMPTIME Sig .580	TRKACCY 0.0094 with N(147) COMPACCY Sig .910	TRKACCY 0.1517 with N(147) TMPERCNT Sig .067

Table K.3 (Combined OSUT - Cont'd.)

TRKACCY 0.0137 with N(147) RSENSE Sig .869	TRKACCY 0.1741 with N(147) GATES Sig .035	TRKACCY 0.1236 with N(141) HITS Sig .144	TRKACCY 0.1180 with N(147) RANKINGS Sig .155	TRKACCY 0.1705 with N(147) GATERANK Sig .039	TRKACCY 0.1737 with N(141) GTHITRNK Sig .039
TRKSPAC -0.4103 with N(147) ACQTIME Sig .000	TRKSPAC 0.0877 with N(147) ACQHITS Sig .291	TRKSPAC -0.2808 with N(147) COMPTIME Sig .001	TRKSPAC 0.0695 with N(147) COMPACCY Sig .403	TRKSPAC 0.2802 with N(147) TMPERCNT Sig .001	TRKSPAC 0.1635 with N(147) RSENSE Sig .048
TRKSPAC 0.2645 with N(147) GATES Sig .001	TRKSPAC 0.0776 with N(141) HITS Sig .361	TRKSPAC 0.2208 with N(147) RANKINGS Sig .007	TRKSPAC 0.2913 with N(147) GATERANK Sig .000	TRKSPAC 0.2785 with N(141) GTHITRNK Sig .001	ACQTIME -0.2032 with N(148) ACQHITS Sig .013
ACQTIME 0.2840 with N(148) COMPTIME Sig .000	ACQTIME 0.0369 with N(148) COMPACCY Sig .656	ACQTIME -0.2131 with N(148) TMPERCNT Sig .009	ACQTIME -0.0627 with N(148) RSENSE Sig .449	ACQTIME -0.2022 with N(148) GATES Sig .014	ACQTIME -0.0756 with N(142) HITS Sig .371
ACQTIME -0.3167 with N(148) RANKINGS Sig .000	ACQTIME -0.3013 with N(148) GATERANK Sig .000	ACQTIME -0.2892 with N(142) GTHITRNK Sig .000	ACQHITS -0.0310 with N(148) COMPTIME Sig .708	ACQHITS 0.0361 with N(148) COMPACCY Sig .663	ACQHITS 0.1289 with N(148) TMPERCNT Sig .118
ACQHITS 0.0829 with N(148) RSENSE Sig .316	ACQHITS 0.0532 with N(148) GATES Sig .521	ACQHITS 0.1084 with N(142) HITS Sig .199	ACQHITS 0.0967 with N(148) RANKINGS Sig .242	ACQHITS 0.0635 with N(148) GATERANK Sig .443	ACQHITS 0.0484 with N(142) GTHITRNK Sig .568
COMPTIME -0.4253 with N(148) COMPACCY Sig .000	COMPTIME -0.4088 with N(148) TMPERCNT Sig .000	COMPTIME -0.0715 with N(148) RSENSE Sig .389	COMPTIME -0.1018 with N(148) GATES Sig .218	COMPTIME -0.0515 with N(142) HITS Sig .543	COMPTIME -0.2148 with N(148) RANKINGS Sig .009
COMPTIME -0.2179 with N(148) GATERANK Sig .008	COMPTIME -0.2368 with N(142) GTHITRNK Sig .005	COMPACCY 0.2419 with N(148) TMPERCNT Sig .003	COMPACCY 0.0034 with N(148) RSENSE Sig .968	COMPACCY -0.0825 with N(148) GATES Sig .319	COMPACCY -0.0894 with N(142) HITS Sig .290
COMPACCY -0.0953 with N(148) RANKINGS Sig .249	COMPACCY -0.0907 with N(148) GATERANK Sig .273	COMPACCY -0.1112 with N(142) GTHITRNK Sig .188	TMPERCNT -0.0049 with N(148) RSENSE Sig .953	TMPERCNT 0.1767 with N(148) GATES Sig .032	TMPERCNT 0.1760 with N(142) HITS Sig .036
TMPERCNT 0.1104 with N(148) RANKINGS Sig .182	TMPERCNT 0.1712 with N(148) GATERANK Sig .037	TMPERCNT 0.2411 with N(142) GTHITRNK Sig .004	RSENSE 0.0245 with N(148) GATES Sig .767	RSENSE 0.0798 with N(142) HITS Sig .345	RSENSE 0.0950 with N(148) RANKINGS Sig .251
RSENSE 0.1127 with N(148) GATERANK Sig .173	RSENSE 0.1953 with N(142) GTHITRNK Sig .020	GATES 0.0252 with N(142) HITS Sig .766	GATES 0.3569 with N(148) RANKINGS Sig .000	GATES 0.8106 with N(148) GATERANK Sig .000	GATES 0.6936 with N(142) GTHITRNK Sig .000
HITS -0.0221 with N(142) RANKINGS Sig .794	HITS -0.0253 with N(142) GATERANK Sig .765	HITS 0.4791 with N(142) GTHITRNK Sig .000	RANKINGS 0.8248 with N(148) GATERANK Sig .000	RANKINGS 0.6924 with N(142) GTHITRNK Sig .000	GATERANK 0.8493 with N(142) GTHITRNK Sig .000